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THE SARGENT DECORATIONS IN THE BOSTON MUSEUM OF FINE ARTS

BY C. H. BLACKALL, F. A. I. A.

THE decorations by John Singer Sargent have now been before the public in the Boston Museum of Fine Arts for a sufficient time to permit of a deliberate judgment of what they really are, how far they succeed and wherein they are limited. They represent the mature work of an artist who made for himself a brilliant reputation in the beginnings of his work in this line, and whose progress as a decorator has been followed with deepest interest by all who hope for the future of art in America. Especially is his work of value to the architect, who by the very nature of his association, appreciates that decoration is such an important factor of real architecture, and who appreciates also the few cases in which either in the present time or the past, architecture and decoration have been successfully combined. Indeed the opportunities for a decoration of this kind are so rare, that when an artist of Mr. Sargent's caliber undertakes it and is given the free hand which he had here, we look for something which would be criticised and judged by a very different standard from what would be considered in connection with work where the field were more restricted, or the opportunities more circumscribed. These decorations have been described in bulletins and illustrated to a certain extent in several of the non-professional periodicals. Much has been published about them, most of it of a laudatory character, and little has been said in questioning the propriety or the success of these decorations, and indeed it seems to be assumed in some circles that it is rank heresy to take any other attitude towards it than that of unquestioning acceptance and reverent, awe-struck admiration just because it is John Sargent's work. But since the questioning attitude is a condition of growth, and because we would wish to see American architecture and decoration attain their best development, we are certainly justified in applying to this work some of the methods and analyses we would apply to any other great work, weighing it for itself without being blinded in our judgment by either the glamor of the man who did it, the past work he has done so well, or the manner in which similar problems were met when the conditions were so different that a choice of solutions was afforded.

A Larger Panel

Regarding Mr. Sargent's ability as a painter, there need be no question. The heights to which he has risen as a draughtsman, as a colorist, a portrait painter and a thinker mark him as one of the great artists of the time, but we can properly consider his work here as a specific decora-

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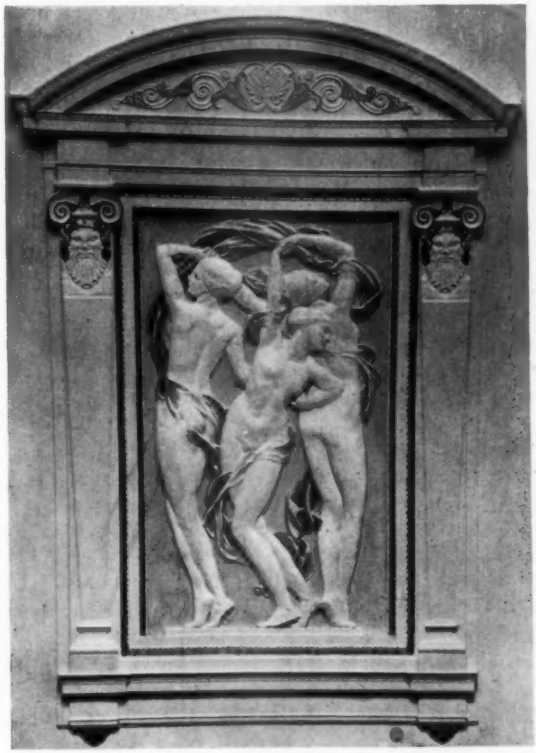
tion of a specific piece of architecture, especially coming as it has after the Public Library in Boston, where his decorations were in a room otherwise of a slight architectural interest, and where the decorations were really the whole thing, the while in the Art Museum a great painter has undertaken to decorate a portion of a highly developed, organic structure where the architecture of the apartment could not be ignored either by himself, or by reference to the architectural forms immediately preceding and leading up to it. It is proper, then, to consider this simply as a decoration of a dome of the Boston Art Museum and as something which must be judged by its fitness for its place rather than of a sample of painting by a great artist.

The Rotunda

The decorations are applied to the surface of a dome over a rather small rotunda at the head of a wide, monumental stairway and at the intersection of the axes of the principal floor of the museum. It is a point eminently fitting for decoration. The dome is an ellipse in plan, and was originally heavily caissoned throughout without any structural or decorative treatment. The walls and ceiling were, and still are, all of plaster, the plaster work being painted to match as closely as possible the rows of limestone columns which flank each side of the principal staircase. The floor is of Knoxville marble, so that the whole effect is a monotone of gray buff stone color. The cornices and arches are of plaster and there is no attempt at lining or showing courses, but it is all frankly nothing but plaster work. When Mr. Sargent took up the problem, he very rightly decided that the caissoned ceiling would not be suitable, that no arrangement of panels could properly go with such a surface treatment, and accordingly, under his direction, the whole surface of the dome, and to a certain extent, of the supporting disposition was modified in accordance with his idea of the decorations. The surface now is intersected by round arches with plain archivolts on the axes of the dome and the pendentives, if such term can be applied to the continuous corner surface, are marked only by perfectly plain ribs springing from the cornice to a perfectly plain ring around the base of the skylight which lights from above. This disposition divides the space into eight surfaces. On the four principal surfaces over the arches are arranged large oval frames containing

paintings. The bases of the pendentive surfaces are occupied by bas-relief groups set in architectural frames. Around the upper surfaces of the pendentives are smaller circular panels crowned by modeled figure work, and between the framed reliefs and the rounds of the pendentives are isolated cameo reliefs applied to the perfectly bare surface. There are no structural lines whatever, the ribs are throughout perfectly plain and with no attempt at decoration whatever. The principal surfaces between the ribs on the axes are treated as units in the sense that the decoration is extended over the whole surface and these surfaces are given a frame and setting of very carefully chosen mouldings, but the appearance of the dome is es-



Relief at base of pendentive

sentially that of a constructive reinforced concrete motif.

As previously stated, the general color of the whole apartment, indeed of the whole building, is of buff Indiana limestone and this color has been adhered to in the dome, lightening up somewhat from the wall color, and carried throughout all the ribs and the surfaces, except in the major panels themselves. The dominant color effect is a very pleasing blue, not a Wedgewood, but suggesting it. This blue is the background of all the painted panels and establishes the color scheme in conjunction with several tones of gold, varying in effect from a pale lemon to a deep red gold. The paintings have in addition a narrow band of deep red against the blue and the frame. Aside from this the gray of the plaster and stone work goes practically everywhere.

The subjects are matters of interest but of no special importance from a decorative standpoint. They are not in the slightest degree connected in theme. They include representations of the Three

Isolated bas-relief in center of pendentive

Arts protected by the heathen deities, of the Nine Muses, and of the Chimera and the Sphinx. Just what relation these would have to the decoration of an art museum is not evident, and perhaps not important. The principal point is the decorative quality of the whole and its coherence in place.

The disposition of the main oval panels is a very happy one, and the spotting of these on the domed surface, together with the strong notes of color of the small pendentive medallions, is one of the fine features of the composition, in that they tie well together and are each proportioned so admirably to fill a very awkward space. The first impression of the dome is a very pleasing one. The effect of the individual groups taken by themselves, and especially when viewed in the detached photographs, is also very agreeable. The introduction of the sculpture gives a variety which is fully justified. It is in the treatment as a whole that a sense of incompleteness, rawness, is most evident. We are told that Mr. Guy Lowell, who is the architect of the Museum, had nothing to do with this work, and that Mr. Sargent called in Mr. Thomas A. Fox as his architectural adviser, but architecturally there is no evidence of any thought being given to it in relation to the rest of the building. It is a different note, while a pleasing one, but it is incomplete. One would wish that there were some recognition by color treatment of the fact that the dome was to be entirely decorated. One may admire the cameo

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qualities of the paintings, and then wonder why some of this same treatment was not carried down the pendentives to complete the structural sense of applied color which is so absolutely lacking. Again the frames for the beautiful figures at the bases of the pendentives are excellent themselves, but they have the effect of being crowded into the spaces, and being exactly the same color as the background, barring touching up with gold and the slight tone behind the figures, they seem like importations rather than incorporations. And when one considers the different parts in relation to the whole, one is struck by the utter absence of anything like a sense of scale. Apollo and the Muses and the corresponding large panels are one scale, not quite the same. The Three Arts is a different scale, and the Sphinx and the Chimera still another, while the small round pendentive paintings are unlike any of the others in scale. The same is true of the sculpture. It is not in scale with the painting, the different groups are not in scale with themselves, there being in the sculpture at least three different scales, none of them related to the general decorated scheme. Whether this is a fault or a touch of genius may be a matter of opinion. Whether unity is even to be desired in a decoration of this kind is apparently seriously questioned by the artist, but speaking only from the architectural standpoint, one cannot but regret that the architectural hand and restraining factors which go to make up every great decorative work could not have been exercised here. There is too much detached easel work and not enough decoration as such. Mr. Sargent simply has not decorated the dome at all. He has arranged some more or less slightly correlated paintings on a domical surface with no sense of fitness and no constructive feeling, and it is not architecture, nor even decoration of architecture, but painting pure and simple. Even his bas-reliefs are really pictorial, and as for the cameo reliefs in the center of the pendentives, it is a question whether the whole composition would not have gained immensely if they were entirely omitted; but again that is a matter of point of view. But granted that the painting is all its enthusiastic admirers claim for it;—granted it has subjective interest and delicate, beautiful color, all of which is another story, it is not decoration of architecture, but decorative panels, which is very different. It is not decoration of architecture because, first, the architectural forms are absolutely ignored; second, because it in no sense covers the surface but concentrates on arbitrary spots; and third, because the whole thing is subjective rather than objective—a matter of detail, with no sense of mass or unity. Every detail, examined by itself, seems complete, not a part of a scheme, and except for its color, every part is more enjoyable and more appreciated in the photographic reproductions than in place. There simply is no scheme, no dominant thought, no intelligent grouping. Somehow, having in mind Mr. Sargent's personality, this work seems strangely unlike him, or as if he had done it under very unusual and varying moods. The difference between the end of the Public Library, which is simply bursting with ideas and colors, and this dome, which is refined almost to the vanishing point, like a piece of rare Wedgewood, does not seem compatible with Sargent's artistic physique and his past work.

And yet when we say the worst we can about it, criticise it most severely, object most strenuously to it as decoration, we are moved by its intrinsic beauty. It strikes a joyous note in an otherwise rather monotonous interior. It redeems a dull spot at the top of a long flight of stairs. One comes back to it with increasing joy, even though with increasing conviction of its being fine painting rather than fine decoration; and measured by every great work of the past, by the great masters of today, even measured by Sargent himself, in his magnificent beginning on the north end of the Public Library, which is truly at once decoration, painting, fantasy, fancy, imagination and pure art,—measured by all the standards architects and decorators have aspired to for five hundred years, it is beautiful, yes;—interesting, yes;—reproduces well, yes;—affords excellent opportunities for easel enjoyment;—but it is not decoration.

THE JUSTIFICATION OF THE ARCHITECT IS ARCHITECTURE

BY ERNEST FLAGG

IN the following article, Mr. Ernest Flagg discusses certain phases of architectural practice and architectural education from his point of view. He makes his points and emphasizes his arguments with a certain degree of logic, but frankly we do not agree with some of his contentions. It is for that reason we are glad to print this article, believing that while from time to time the policy and attitude of THE AMERICAN ARCHITECT *have been very plainly indicated those of our readers who are not completely in accord with our opinions should be afforded an opportunity to present their own arguments, especially when set forth based on experience so long and so active as that of Mr. Flagg.*

THE EDITORS.

IT would be interesting to know what percentage of the building of the country comes under the control of the out-and-out architect and how much is done by the architect-builder and others.

Reckoned by number certainly the great majority of buildings come under the latter class. The builder of that kind of small house which constitutes the major part of new construction, sees no more reason for employing an architect than does the ordinary builder of tenements, factories, etc. The contractor will gladly furnish such drawings as are needed and the owner thinks he gets them free.

Although most buildings, made without the services of the professional architect, may be inexpensive, that is by no means true of all. The small architect-builder is not the only one who is displacing the architect.

Formerly the architect acted as the sole intermediary between his client and the doers of the various kinds of work such as masonry, carpentry, plastering, plumbing, painting, etc.; but now another has appeared in the person of the general contractor who does more or less work himself and farms out the rest. His strong argument is that he can give the owner a fixed price.

At first, in deference to long established custom, the general contractor interfered little with the architect. He thought, and indeed sometimes still thinks, that it may be more to his interest to cooperate with the architect than antagonize him. The general contractor, as has been said, likes to do as much of the work as he can himself and he generally feels quite competent to deal with architecture, even if he does not undertake it.

As architecture, with us, drifts further and further away from the status of a profession towards that of a business, and as the architect relinquishes the functions of the artist for those of a lower order, it becomes increasingly evident to the general contractor that he himself is of the elect, so far as "architecture" is concerned. Is he not better equipped for business and is he not in closer touch with the work than the architect? So sure is he of his position that he often offers to help the latter. He maintains a staff of draughtsmen and can sometimes relieve the architect of a great deal of work.

Both contractor and architect would indignantly deny that there was any thought of bribery in this, but that is certainly what it often amounts to.

St. Luke's Hospital, New York, was my first commission. Soon after its award a prominent contractor called, congratulated me, and said he would like to bid on the work when the plans were ready. In the meantime he offered to place his engineering staff at my disposal in getting out the structural steel drawings. He said this would save me a great deal of money and also benefit my client because he could make a lower bid for work based on his own drawings than otherwise. Finally he assured me that neither I nor the hospital would be under any obligations—a statement which I thought would probably be true as regards the hospital.

The feeling which formerly prompted the general contractor to interfere as little as possible with the architect, seems rapidly wearing off, and more and more openly he advertises both to construct and design.

A few years ago the late Mr. Walter Kerr of the contracting firm of Westinghouse, Church, Kerr & Co., told me of a great building project his concern was about to undertake. At first I thought he intended to consult me as architect, but I was soon undeceived. He said he had a whole loft full of architects in his employ who would attend to that part.

Some time ago I had occasion to visit Mr. Arthur Hoggson of the contracting firm of Hoggson Brothers, on a matter of business and before I left he showed me through his admirably appointed establishment where, among other things, I saw a full fledged architectural department in operation. On the walls were drawings of completed work as much like that of the ordinary American architect as if made with the same rubber stamp.

Not long ago I applied to the Board of Standards and Appeals for permission to carry on

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architecture in a house of mine on a street restricted against business, that request having been denied by the Building Department. I contended that mine was a profession and that the restriction against business did not apply. One of the Board said, "I should call architecture a business."

And is it not true that most of what is commonly called architecture, in this country, is carried on as a business?

In numbers, as has been said, the vast majority of the buildings of the country are designed by men who make no pretense of understanding the principles of design; while most of those who claim to be architects, in the full meaning of the term, certainly do not always apply them in their work.

A general survey of the present day architecture of the country can hardly be flattering to our *amour propre.*

Do our constructions add to the beauty of nature?

Is it not true, with us, that where man comes beauty generally vanishes from the landscape?

Are the suburbs of our city pleasant to look upon?

Except in the best part of cities, what unadulterated ugliness generally meets the eye. In New York, for instance, walk at random at either side of the better part and what sordid, hopeless lack of beauty does one find. What an environment in which to live! Why should people care to exist if condemned to such surroundings! One who is not utterly callous to the finer feelings must be depressed and disheartened by what he sees. Or if he confines his steps to the better parts of the town what jarring discords meet him. What a hodge-podge is presented for his admiration. What triumphal commercialism; what disregard of beauty; what monumental greed; what lies, in design and construction, face him at every turn. Buildings which violate the fundamental laws of good design over and over again, many of them constructed at enormous cost by architects who stand high in public esteem.

The fundamental laws of good taste in design are little taught in this country and even among supposedly educated people it is rare indeed to find one who can give an intelligent analysis of the qualities of a design, while others who pretend to know the rules of art do not include common sense among them.

To many it may seem a grossly exaggerated statement to say, that with comparatively few bright exceptions, architecture is not practiced in this country. What passes for such is not architecture, as that term has been understood ever since man first began to take pride in construction, up to about one hundred years ago, but something else.

For a hundred years architecture has been overwhelmed by a wave of archæology. The great flood of illustrations which then set in has completely changed the methods of building design.

Formerly the designer was inspired by what he saw about him and worked only in a style which both he and the craftsmen, who worked with him, understood. The skilled mechanic knew the fashion in building just as the seamstress knows the fashion in dress, and needed only general directions from the master designer. It was not necessary for him to draw out, in full size, every detail. The workmen needed no such assistance. In some mediæval church one may find an indefinite number of capitals, bosses and other ornamental features all different, but all in the style of the time, each one the work of the individual, skilled mechanic to whom its making was entrusted. The master builder had simply to exercise a general supervision. Or to come nearer home and our own times—what exquisite bits of detail does one find in many a humble colonial construction done by some housewright or carpenter with no other assistance, in design, than that acquired through years of practice in the style of the time. But how can the mechanic of today be expected to be familiar with all the fashions of former times with which the modern architect decks out his work or disguises his construction?

The truth is that what passes here for architecture is a sort of archæological-architectural compound, neither architecture nor archæology though outwardly wearing the semblance of both.

Architecture is not constructed design and archæology takes account of more than the mere surface appearance of ancient buildings and monuments.

Architecture, in the historic meaning of the word, is beautified construction but what has construction to do with much of our "architecture" except to hold it up.

If we analyze the design of almost any one of our most popular buildings, what do we find? Not beautified construction but disguised construction. What meets the eye is constructed design, a sham. Most things about it are gross attempts at deception. Walls are not real walls; columns are not real columns and do not carry what they appear to carry. We see structural members which seem to support while themselves being supported: materials which are not what they pretend to be; features and motives which have no more meaning, so far as the internal arrangement of the building or its construction are concerned, than have the painted scenes on the stage of a theatre. When to all this is added an incongruous style of architecture evolved from some former method of construction with which ours has nothing to do, the thing simply amounts to a monumental humbug which, though it may pass as good architecture now, will sooner or later be condemned.

Except in a few bright spots, our national style is an architectural jumble, a heterogeneous mixture of abandoned fashions and false construction which would be comic were it not so tragic. Romanesque, Georgian, Colonial, French of all periods, Italian, Dutch, Renaissance and everything else, so far as outward semblance is concerned, carried out with modern engineering methods in defiance of reason or common sense.

We have been a hundred years building up this fabric, of which most Americans are very proud; but some day the truth will dawn on them and they will ask themselves why have all these old fashions and false methods; why not substitute therefor those simple laws of good taste which produced the beautiful things we now copy and adopt? Why have the pictured representation without the spirit, the husk without the kernel, the forms without the reasons for them? Can good art come of false methods? Can it be at variance with common sense? Can construction be divorced from design and the result be architecture? Is what we have so good that it should be continued?

If the change is to be made it should start from the foundation. It should begin in the schools. The pupil should be taught that good art must be based on common sense. That to be right a thing must be reasonable. He should know that every enduring masterpiece of architecture was strictly modern, in design and construction, when built and that the best copy or adaptation is of little value.

When one surveys our modern schools of architecture he finds that the plant is considered good in proportion as it abounds in the very things which have been most injurious to modern architecture, that is to say, in countless books, illustrations and photographs of buildings and styles of former times which have bred in the modern designer the desire to copy rather than invent.

Archæology is most useful and interesting if properly used, but destructive of art as we use it in our buildings and schools of architectural design.

Under the guise of architecture, archæology receives first place and, in one way or another, occupies most of the student's time and attention. When he graduates he is supposed to be competent to make good counterfeits of former styles and successfully to disguise or camouflage the modern method of construction so that it will not be recognized for what it is. Of the true principles of design he knows little and cares less.

What then would be a proper curriculum?

If the writer were to suggest he would say revert to those methods which in all past time have produced artists and enduring works of art.

The justification of the architect is architecture.

If the architect is not an artist what is he? If he is to act as a business man then he does not receive the proper training and cannot compete successfully with him who does. Already he has lost half the construction of the country and will fare worse if he does not return to his legitimate functions.

If it is admitted that architecture should be a fine art; that the architect should be first of all an artist; that present methods of teaching and practice have not produced satisfactory results; then the proper course in instruction should be apparent.

The way to make artists is perfectly well known and it is simply necessary to abandon present methods of teaching which do not make them, and revert to those which do.

The human form as it approaches perfection is the criterion of design and construction. It is the most beautiful object in nature and the most perfectly constructed object in nature. The study of its beauties has in all ages produced artists and the more intensive the study the higher the standard of art.

This then is the key to art. A knowledge of the beauties and refinements of the human form produces beauty and refinement in all branches of design. One has simply to consult the history of art to find this truth overwhelmingly demonstrated. Among the ancient Greeks; at the time of the Renaissance and at every other great art epoch, the enthusiastic study of the beauties of the human form was the most characteristic manifestation. Men who held that key could turn their hands to any branch of art whether of architecture, painting or sculpture with equal success.

This truth is so well known that it seems extraordinary that educators do not profit by it.

If the student is to become an architect in the true meaning of the term, that is to say an artist, then his chief concern should be with art, and how can he do better than draw inspiration from the fountain head of art?

No matter what else may be taught the major part of the student's time should be spent in drawing, modeling, studying and having expounded to him the beauties of the human form and their relationship to all branches of design and construction. That is the way artists have been produced in the past and it is the way to produce them for the future.

But it should always be borne in mind that although the human form may be the most beautiful object in nature, it may also, when misshapen, become one of the most revolting objects in nature, and between those extremes there is endless variety of ugliness: Art of the sort here discussed has to do with beauty only and the object of the student should be to learn art rather than anatomy, therefore the quality of the model is of the utmost importance.

Some time ago I was shown the work of stu-

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dents in a life class attached to a school of architecture. The professor said the students could not see the use of it, and as I looked at their work, I agreed with them. If the drawings resembled the models, there certainly was no use in it, for how can beauty be learned from ugliness or inspiration drawn from things devoid of it?

It has been asked, how can beauty be had in the small house if the owner cannot afford or will not pay a competent person to design it?

It seems to the writer that one way would be to change convention. The conventional small house is ugly. If the ordinary builder can be shown that it would be more profitable for him to adopt a different type and if that type was good looking a great step in progress would have been made. This the writer has tried to do in his book "Small Houses."

The chief trouble with the ordinary small house of today is that it has ugly proportions. It is too high for its base. In the work above referred to it is demonstrated that much may be saved in cost and gained in beauty by reducing heights, by certain methods therein described and illustrated. When this truth is realized perhaps the conventional type of small house will change for the better.

Still another way to help the process would be to improve the general standard of taste. This is apparently a formidable undertaking, but chiefly so because those in authority do not realize how easily it might be done if the right methods were used; nor how great would be the benefits.

If one tenth of the time spent in the schools in teaching things of little value to the pupils was spent in expounding the fundamental principles of design or laws of beauty, public taste would rapidly improve and with it improvement and increase in value in all products of labor.

In no other way can wealth be so easily created as in applying to all products of labor, dependent on design, the principles of good taste which result in beauty. No one will deny that beauty increases value and beauty may often be had at less cost than ugliness if one knows the rules which produce it.

We make a mystery of art, but there is really nothing mysterious about it. The true principles of design are so simple that a child may understand them. They are easy to learn, easy to apply and should be taught with the alphabet. If applied to design, the result will automatically be good.

The main principles of design as applied to construction are comparatively few and can quickly be mastered by any one of intelligence who will set himself to it. If the chief points as explained in the writer's book "Small Houses" above referred to, are grasped, he will at least know what is right and what is wrong and having that knowledge is nine points in ten.

If public taste were a little more elevated, vast numbers of people who now feel that anything spent in obtaining beauty is money thrown away would be willing to pay the competent designer and as beauty begets beauty, just as ugliness begets ugliness, conditions would rapidly improve. If the value of beauty were understood, improvement in the surroundings of buildings would also improve and the present abomination of ugliness which one sees here so often, in the suburbs of cities, would become as rare as in Europe.

The writer is well aware that his views will not meet general approbation. With public taste in the condition indicated by our architecture, it would be strange indeed if they did; but some will recognize the truth and he has the most abiding faith that this leaven, no matter how small, will, in time, pervade and elevate the whole mass.

DESIGNING SMALL STONE BRIDGES

BY GILMORE D. CLARKE

Member American Society of Landscape Architects

LITTLE is to be found in books relative to the architectural design of stone bridges adapted for use in naturalistic parks and parkways. Most small highway bridges in this country are designed with only a utilitarian idea in mind; seldom does the architect lend a hand in the design of these structures, for the engineer assumes that art is not a consideration. As a result, we have the ugly concrete bridges which adorn our highways. W. Shaw Sparrow in his "Book of Bridges" says, "Railway bridges have been built in obedience to a brace of conventional arguments. It has been argued, first, that because traffic and trade are the main considerations, therefore art is not a matter to be considered; next, that because boards of directors have to please their shareholders, therefore a most strenuous economy must be advertised in a very evident manner, even although its results blot fine landscapes with the shame of uninspired craftsmanship." This is as true of highways as well as of railroads. Why is it not possible to make all of our state highways more like parkways by the use of art in highway structures?

What charm most European highway bridges possess; they were inspired by craftsmen and what a joy it is to study them. Stone bridges might easily surplant our concrete structures, or at least the worst of them, by facing the concrete arches with stone or by covering the flat lintel type with a wooden beam or log and the wing walls with stone. Probably this will never be done, leaving our only hope in the proper planning for the future. I take no issue with the designers of modern viaducts of concrete. Many possess beauty of line, of mass and even of detail,

West Elevation of a Bridge Over the Bronx River at Hartsdale
Gilmore D. Clarke, Landscape Architect

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but of course lack the beauty of color and texture of the native stone.

It is intended here to discuss the problem of the architectural design of small stone bridges, such as are used in a well designed naturalistic park or parkway. Obviously, concrete does not lend itself for use as well as the native stone. One must not be led to believe, however, that the use of concrete is taboo in all landscape design, for parks and parkways. Parks and park drives near the ocean, where native stone is not available, are places where concrete, in carefully designed structures, may be used.

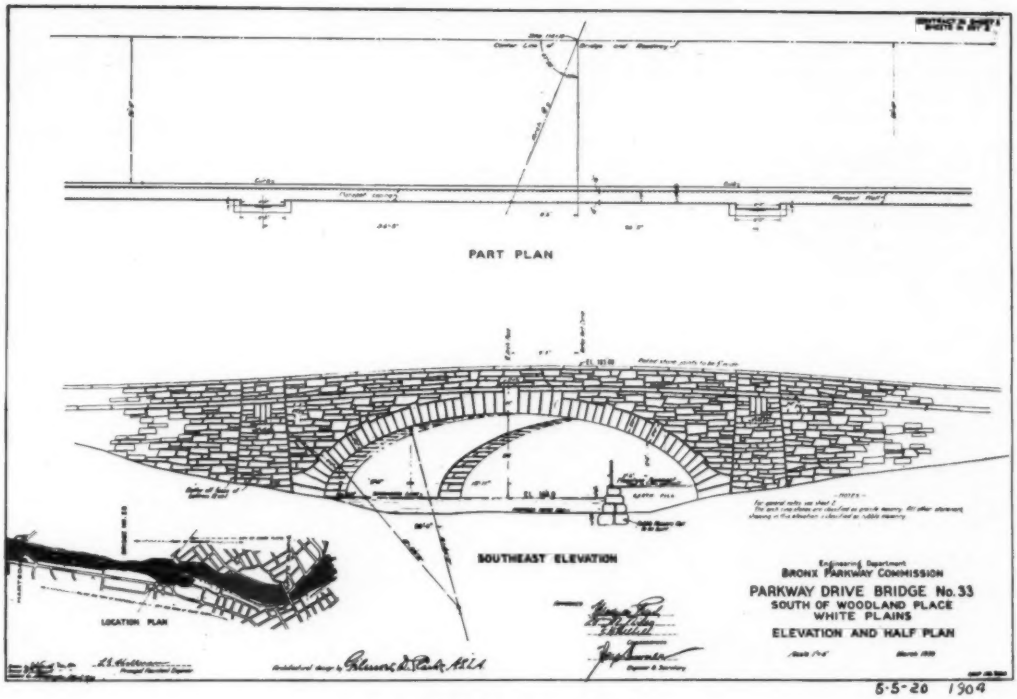
The possibilities for architectural treatment for the small stone bridge are somewhat limited. The close association of the structure with trees, land and water, prohibits the use of ornate design. Structures should be designed to become an integral part of the picture, a part of the natural surroundings, rather than being designed as a picture in itself. The designer must rely upon the line of parapet wall and arch for good proportion and beauty of outline. Long wing walls are monotonous unless broken with vertical lines of buttresses, which cast shadows to make an otherwise flat surface more interesting, and further to add a feeling of strength.

Many European bridges of the last century, particularly those of a single span, possess a decided camber. These are not well suited to automobile traffic, but in order to bring the charm of these old structures into our designs, we should where possible, retain a slight camber. Bridges may be made to appear to have camber by designing the parapet walls with a vertical curve. The appearance of the camber is then ever present even though the road profile may be flat. Camber on park bridges is more warranted than on the highway, and a long flat verticle curve in the road over a bridge gives one a pleasant sensation when driving, a feeling that a bridge is the reason for it. Small structures, those of a span of less than thirty feet, would be better if the drive over them maintained its natural gradient.

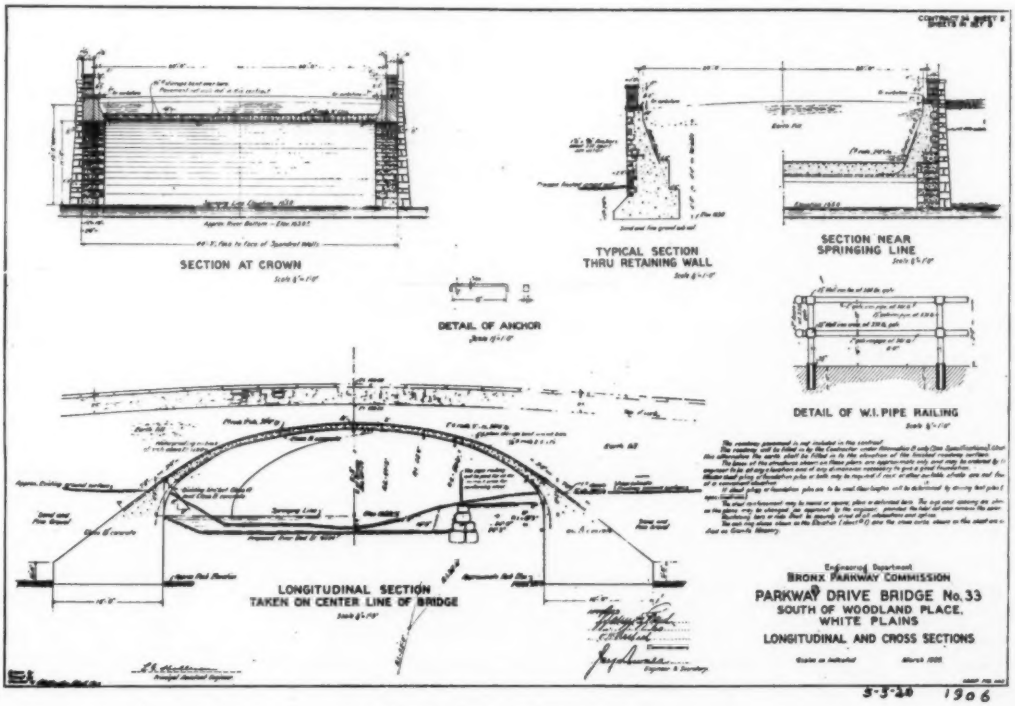
The design of the arch must, of course, meet the need of each particular problem. The elliptical arch, to my mind, is better adapted for use in small bridges than is the segmental arch. Where there is sufficient height above the springing line, a three or five centered arch may well be used. It possesses a more graceful line, causes the structure to appear lighter, for it allows a greater view through the arch. One has no alternative in cases where the span is long and relatively low; here in order to have a sufficiently strong arch the single centered or segmental arch must be used.

The detail of the stone work is a matter for the designer to have carried out under his own personal direction. So much depends upon color, texture, and proper jointing of the stone, that the resultant finished product depends upon good workmanship. Native stone is recommended, and weathered native stone is still more valuable. When weathered stone is used the finished work presents a feeling of age and the bridge blends with its surroundings and sooner becomes a harmonized part of nature's picture.

Sketch for a Proposed Bridge Over the Bronx River at White Plains
Gilmore D. Clarke, Landscape Architect



Gilmore D. Clarke, Landscape Architect

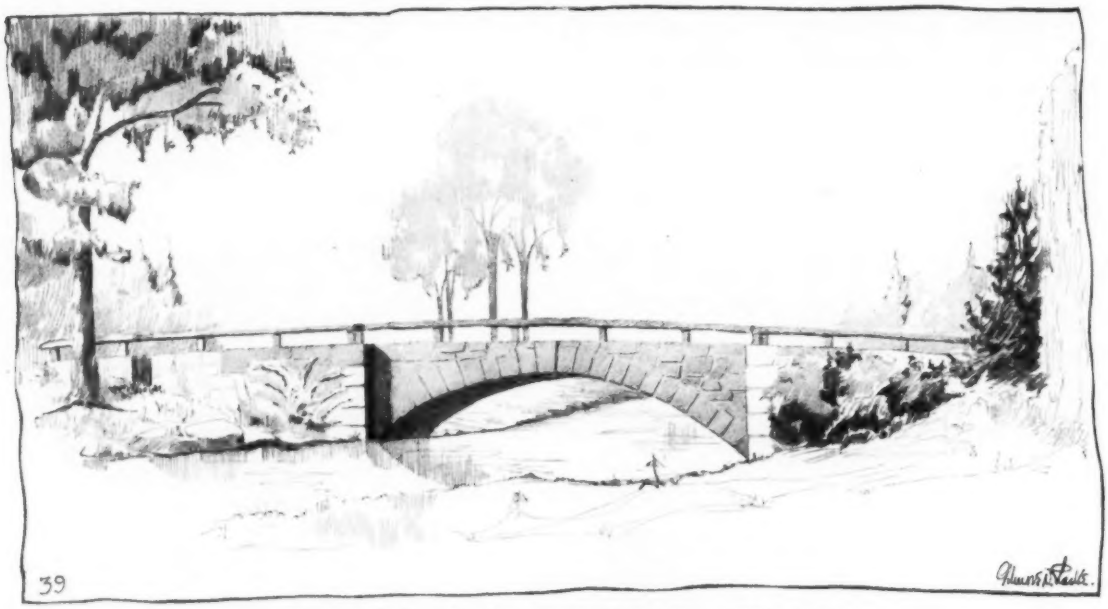


Gilmore D. Clarke, Landscape Architect

XUM

The bridges illustrated here give an idea of a few possibilities of bridge design for park purposes. It seems as though we should give more thought to the design of these structures, for bridges remain monuments of the ages. At this time when new parks, reservations, parkways and highways are being proposed there is an increasing demand for artistic bridges. Why should we not add a touch of the artistic to our highway bridges; why not add charm to our country highways by the addition of structures fitting to the surroundings, structures in tune with nature, rather than adopt the hideous concrete designs of the engineer, who seldom knows art?

The bridge designer must cause his work to develop in a manner that will leave his finished product a part of nature herself; bridges must be in close harmony with nature in color, in texture, in line, and in feeling. An artist who can design a bridge with these principles in mind cannot help but leave a work of art as a monument to his genius.



Sketch of a Proposed Bridge Over the Bronx River at White Plains
Gilmore D. Clarke, Landscape Architect

·EDITORIAL·COMMENT·

"BEAUTY," SAID MR. BURNHAM to the citizens of Chicago, "has always paid better than any other commodity and always will." He referred to Pericles as a political genius who knew how to perpetuate the prosperity of a city by enhancing its beauty. The *raison d'etre* of the profession of architecture lies in the plain statement that beauty pays. Were clients not in search of beauty allied to utility our cities would be sorry looking places filled with structures designed and erected by men who place utility and cheese paring economy above all else. Since clients do want buildings pleasing in appearance they employ architects; and architects after all is said are artists.

An artist, a real artist, is one who is master of the technique of his art and he who starts out to be a painter without knowing his materials and the effects possible to obtain with them, may paint all his life and dying be soon forgotten. He who begins life with aspirations to become a sculptor will end as a common stone cutter if he concentrates on the technique of stone cutting and neglects the technique of the art. If his creation does not compel men to halt and dream he is no sculptor.

So it is with the architect whose dreams drawn with meticulous care on paper and executed by skilled artizans are exposed to rays of pitiless publicity. If he knows the possibilities of all the materials entering into the structure, above all into the façade, and uses this knowledge wisely his future is secure. The technique of the art of the architect has changed little with the passing years. There has crept in, however, an increase in the demands of clients, and without clients even the best artists cannot live. Present day clients demand along with beauty every convenience and utility the fullness of modern life affords and the architect, the master builder, never more of a master builder than he is today, cannot hope to justify his position as a member of society unless he adds to his ability as an artist the skill of the engineer and the acumen of the business man.

So long as the artist gives evidence of ability to handle the multitudinous and multifarious details of modern building he is secure. His client, however, strictly limits the exercise of personal judgment to things essentially artistic; for materials, processes and equipment economic in kind and by nature he rightly insists upon decisions based upon easily enforceable standards. What does it benefit a man if he pays for beauty in design yet obtains a building containing defects which interfere with the earning of a proper return on the investment? An answer to this question goes far towards a solution of the problem of settling how a young man should be trained for the practice of architecture.

* * *

IT IS REGRETTABLE that disasters seem to be required to point lessons. During erection the steel work of the American Theatre in Brooklyn fell, causing seven deaths. Four years after the completion of the Knickerbocker Theatre in Washington, the roof fell, causing 98 deaths. Investigations resulting in a number of indictments which will be followed by trials, showed that in both cases the cause was the same; changes made in the design of the roof framing by the builders after the plans of the architect had been approved by the authorities. Perhaps the architects from the nature of their contracts with the owners were powerless to prevent the changes from going into effect. They were not, however, powerless to protect themselves by filing protests and disclaimers of responsibility with their clients; and also with the municipal authorities who are charged with the duty of enforcing the building laws.

Contractors are too prone to make changes after signing contracts. Architects are too complacent in their acquiescence in this practice. Nearly all reported accidents due to defective design or construction have occurred because of the substitution by the contractor of something which increases his profit, the while it disturbs the confidence of the client in his architect; in fact in all architects. The specifications may not contain the words "or equal" but every departure from the terms of the original contract shows the existence of the lack of confidence in his own ability that is implied whenever an architect descends to their use. Mutual confidence is the essence of all contracts and if clients are to have confidence in architects the latter must display confidence in themselves and their work. Firmness is a virtue, a proof of strength based on ability and lack of firmness has caused the ruin of many reputations.

* * *

OWN YOUR OWN HOME expositions seem to be out of place in the spring. It takes time to have plans fixed up to suit the owners, their families, relatives and friends, to obtain bids, let contracts, and, finally, to obtain materials. This requires months and labor has an uncomfortable habit of demanding higher pay early in the summer and then making itself scarce when it is most in demand.

These expositions belong to the fall months.

XUM

Contractors would like to arrange their work for the next year and a June bride should really move into her new house soon after the wedding. To wait until spring to present in alluring manner the felicities of home owning is a manifestation of procrastination, the great curse of humanity.

Fall planting and winter cultivation worked wonders in agriculture and the implantation in the fall of a desire to own a home, followed by sustained and judicious cultivation during the winter months of the instinct thus aroused, should produce a goodly crop of contracts early in the spring. Chicago reported the end of her exposition this week and during April the people of New York will be invited to leave their aggregations of cubicles and try the joys of living in detached houses.

* * *

THE LOSS OF TIME for labor in construction industries averages for all the trades about twenty-five per cent. Nearly all lost time is in the winter months when paralysis seizes building operations. Mr. Herbert L. Towle, of Philadelphia, is doing good work in making a study of why construction work is generally halted during the winter months, in the hope of being able to help change age-long habits.

Habit alone seems to be the reason for brisk and dull seasons in building construction. All year construction will be an accomplished fact when plans are made to keep on working regardless of temperature. The construction of manufacturing plants is not halted when winter comes and in every city work on the erection of commercial buildings keeps on within warmed enclosures because the loss of revenue during construction is counted as part of the cost. The warming of enclosures, and at times of materials, adds slightly to the cost, but appears to be offset by increased energy in the workmen who work with more vigor not only to keep warm but to keep their jobs. With proof from many places that good work can be done in winter it is plain that habit is an important factor in seasonal work in the construction industry. An analogy may be drawn from the conduct of war. In the Civil War all armies went into winter quarters and summer was the fighting season. In the World War one tremendous battle went on continuously, day and night, through all the seasons of the year. It was no longer "Thirty days of marching and resting with one day of fighting," as a famous tactitian wrote a half century ago. It is taken for granted by all soldiers that there will be no halt in operations in future wars and some of the larger contracting firms now say that "nor winter nor summer, rain nor sun, day nor night" will prevent the completion on time of work they undertake.

Unsettled costs aid habit because costs in general are based on seasonal conditions. For many contractors there is an element of gambling in figuring on work to be done in the winter time. It is necessary now for labor to fix rates of pay to cut down the twenty-five per cent. loss of time to ten or fifteen per cent.; contractors to cut down somewhat on profit to reduce overhead; manufacturers to make special prices on materials during the winter months; railways to reduce rates on construction materials. Costs will thus be stabilized and prospective builders may be led to feel they are approaching a bargain counter. When all the year building becomes a habit costs will be self-regulatory.

With experience and skill the "cold weather differential" in New England ranges from three per cent. to five per cent. of which about one-half is said to be labor cost added by cold weather. When each of the individuals contributes enough to bring costs a trifle below summer costs and owners are convinced that winter work will be of equally good quality, the battle will be won and a long step forward in the problem of unemployment will have been taken.

Co-operation between the interests involved can best be secured through architects. Owners should be urged to look upon every month as a good planning month and not to delay the release of plans until late summer with the idea of letting contracts in the spring. The movement for all year construction has received an impetus which cannot be wholly checked. The architect must now aid the builder who is willing to work every month in the year if he is given the chance.

APARTMENT HOUSE, NO. 635 PARK AVENUE, NEW YORK

J. E. R. CARPENTER, ARCHITECT

XUM

DETAIL OF PRINCIPAL ENTRANCE

APARTMENT HOUSE, NO. 635 PARK AVENUE, NEW YORK

J. E. R. CARPENTER, ARCHITECT

XUM

APARTMENT HOUSE, NO. 550 PARK AVENUE, NEW YORK

J. E. R. CARPENTER, ARCHITECT

(See page 265 for typical floor plan)

XUM

DETAIL OF PRINCIPAL ENTRANCE

APARTMENT HOUSE, NO. 550 PARK AVENUE, NEW YORK

J. E. R. CARPENTER, ARCHITECT

XUM

APARTMENT HOUSE, NO. 640 PARK AVENUE, NEW YORK

J. E. R. CARPENTER, ARCHITECT

(See page 265 for typical floor plan)

XUM

XUM

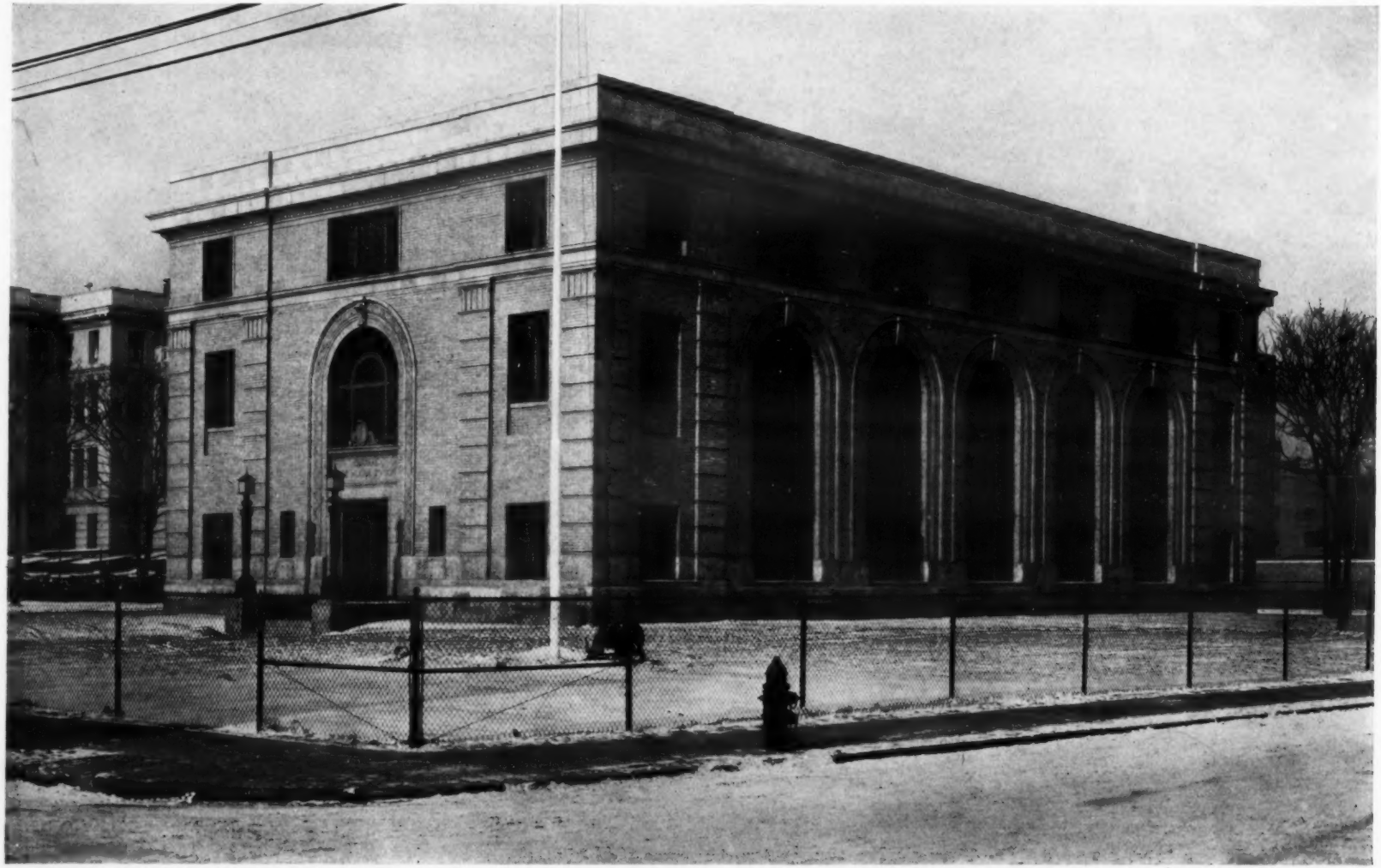
DETAIL OF PRINCIPAL ENTRANCE

APARTMENT HOUSE, NO. 640 PARK AVENUE, NEW YORK

J. E. R. CARPENTER, ARCHITECT

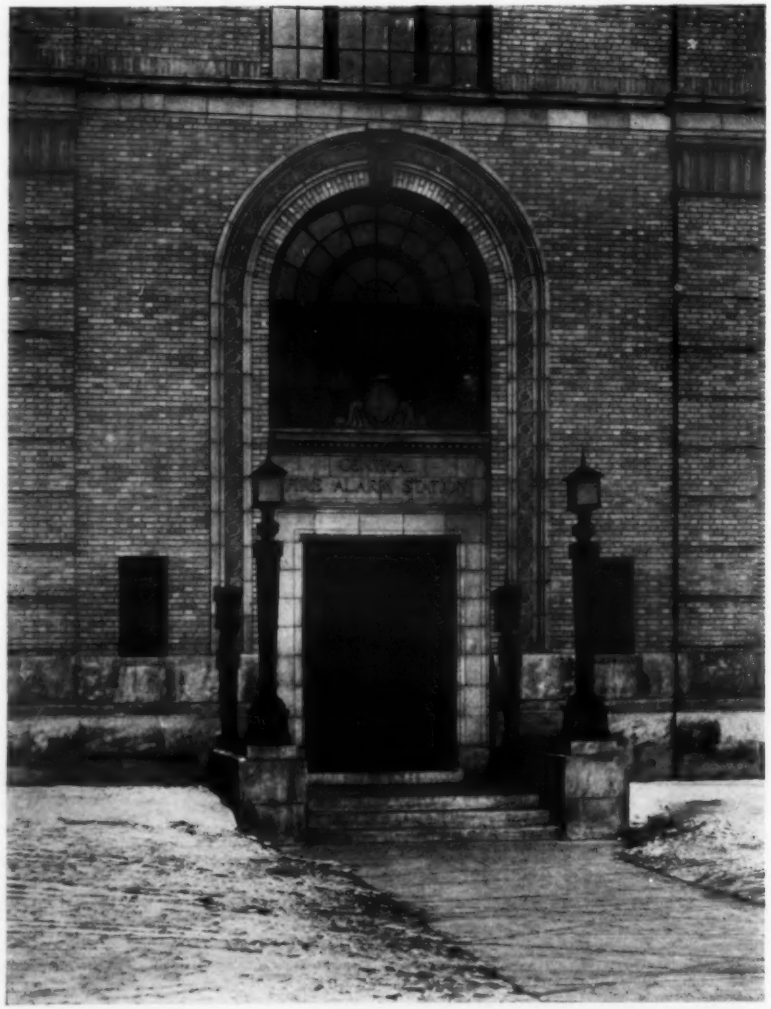
XUM

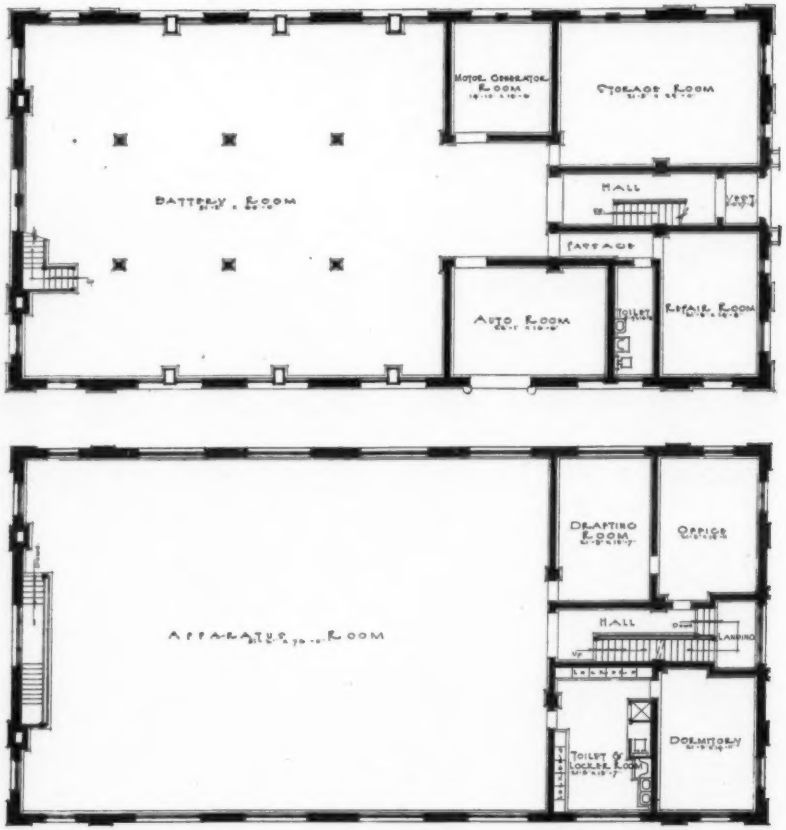
VOL. CXXI, NO. 2390 MARCH 29, 1922



CENTRAL FIRE ALARM STATION, DETROIT, MICH.

DONALDSON & MEIER, ARCHITECTS





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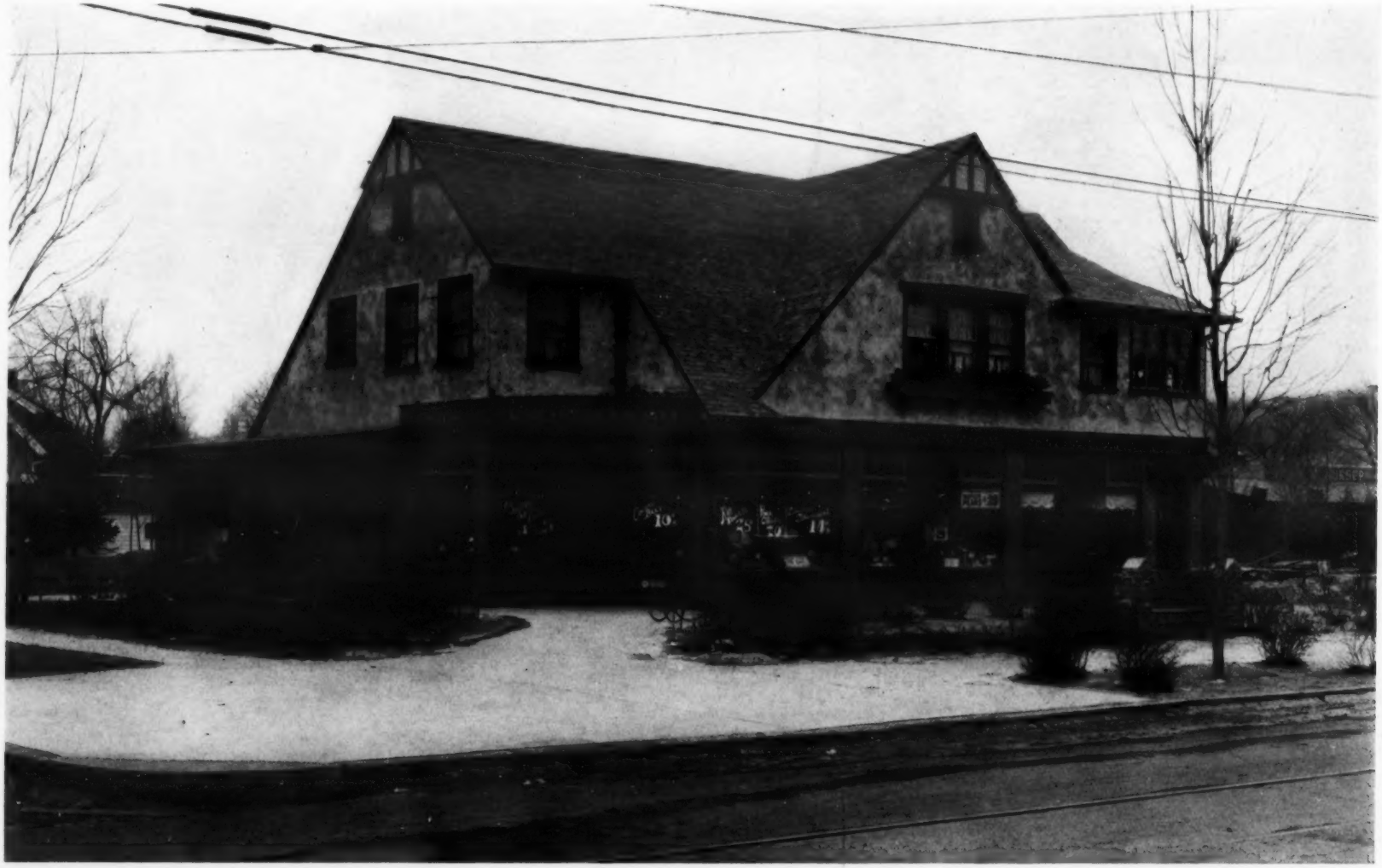


STORE BUILDING, WESTVILLE, CONN.

BROWN & VON BEREN, ARCHITECTS

(See page 266, for first and second floor plans)

AT TOP, GENERAL VIEW; BELOW, MAIN BANKING ROOM

BANK BUILDING FOR HINCKS BROS. & CO., BRIDGEPORT, CONN.

WALTER JOHN SKINNER, ARCHITECT

(See page 267 for plans)

XUM

DETAIL OF ENTRANCE

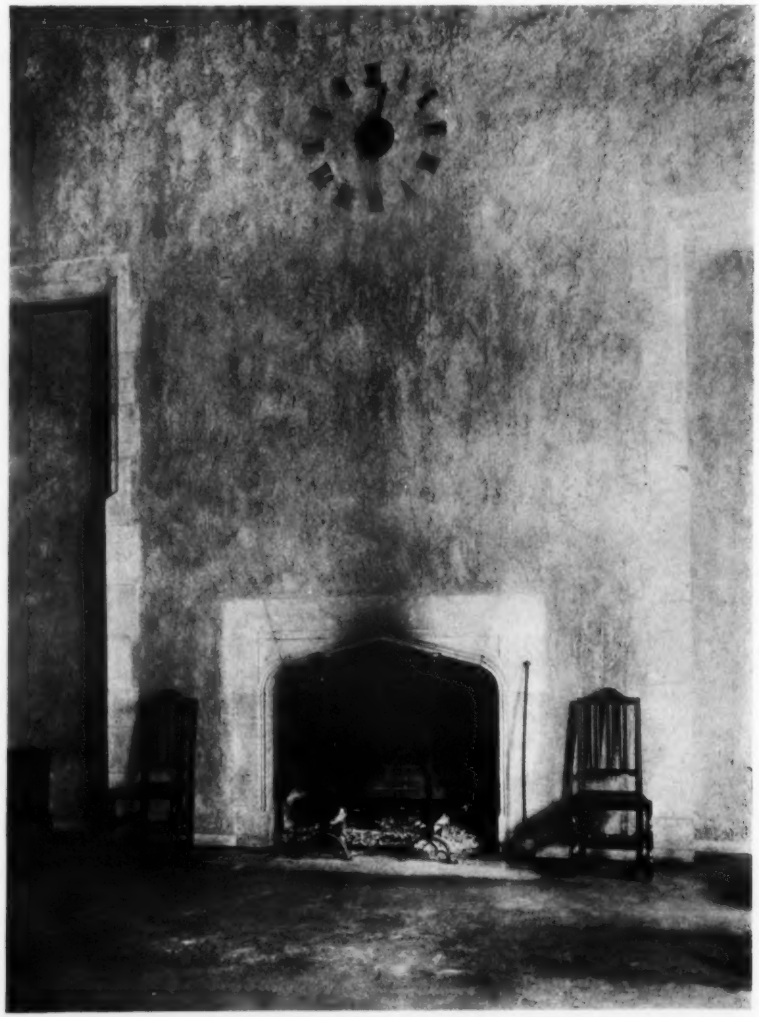
BANK BUILDING FOR HINCKS BROS. & CO., BRIDGEPORT, CONN.

WALTER JOHN SKINNER, ARCHITECT

XUM

XUM

VOL. CXXI, NO. 2390 MARCH 29, 1922



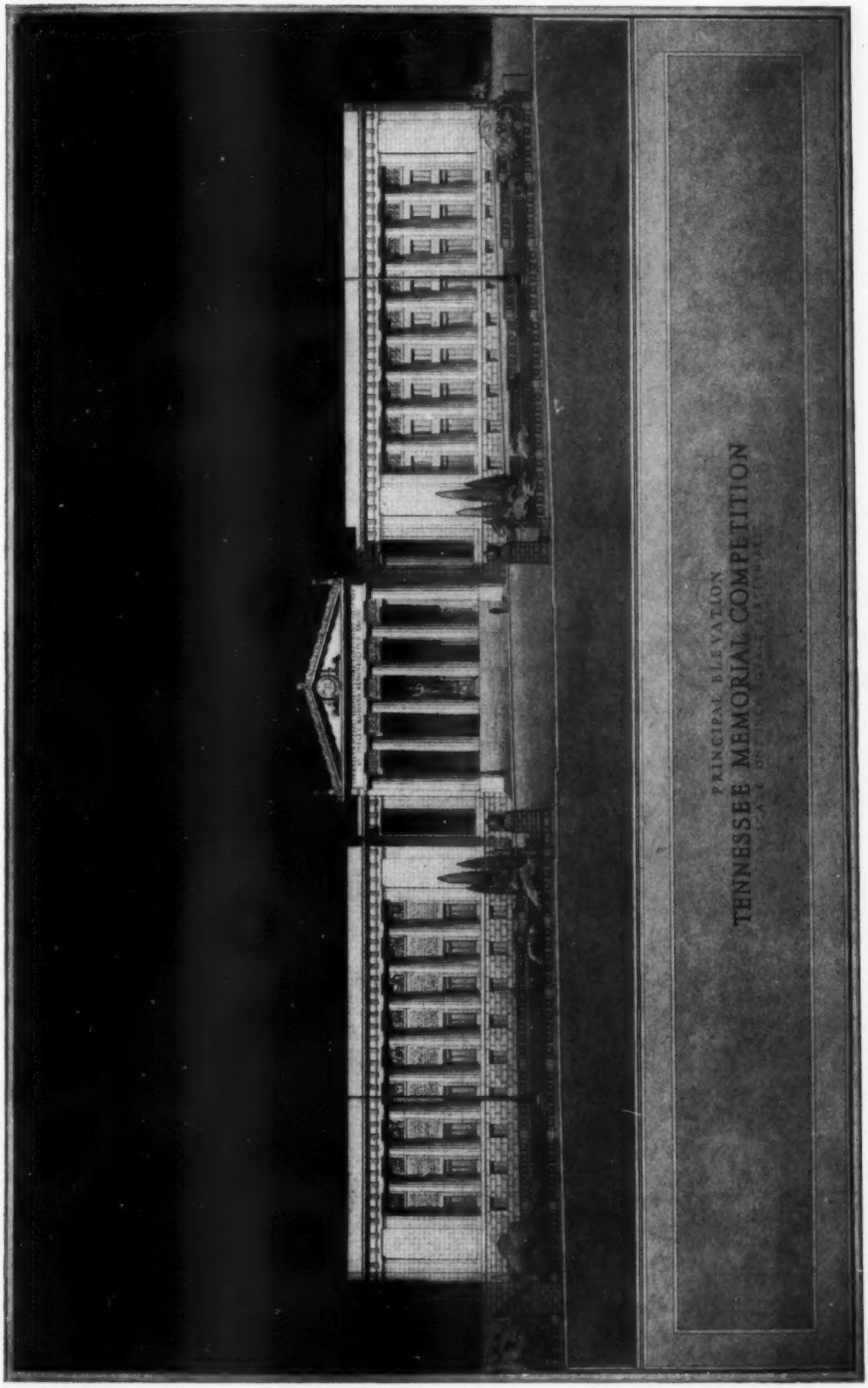
MANTEL IN MAIN OFFICE

BANKING ROOM, LOOKING TOWARDS OFFICES

BANK BUILDING FOR HINCKS BROS. & CO., BRIDGEPORT, CONN.

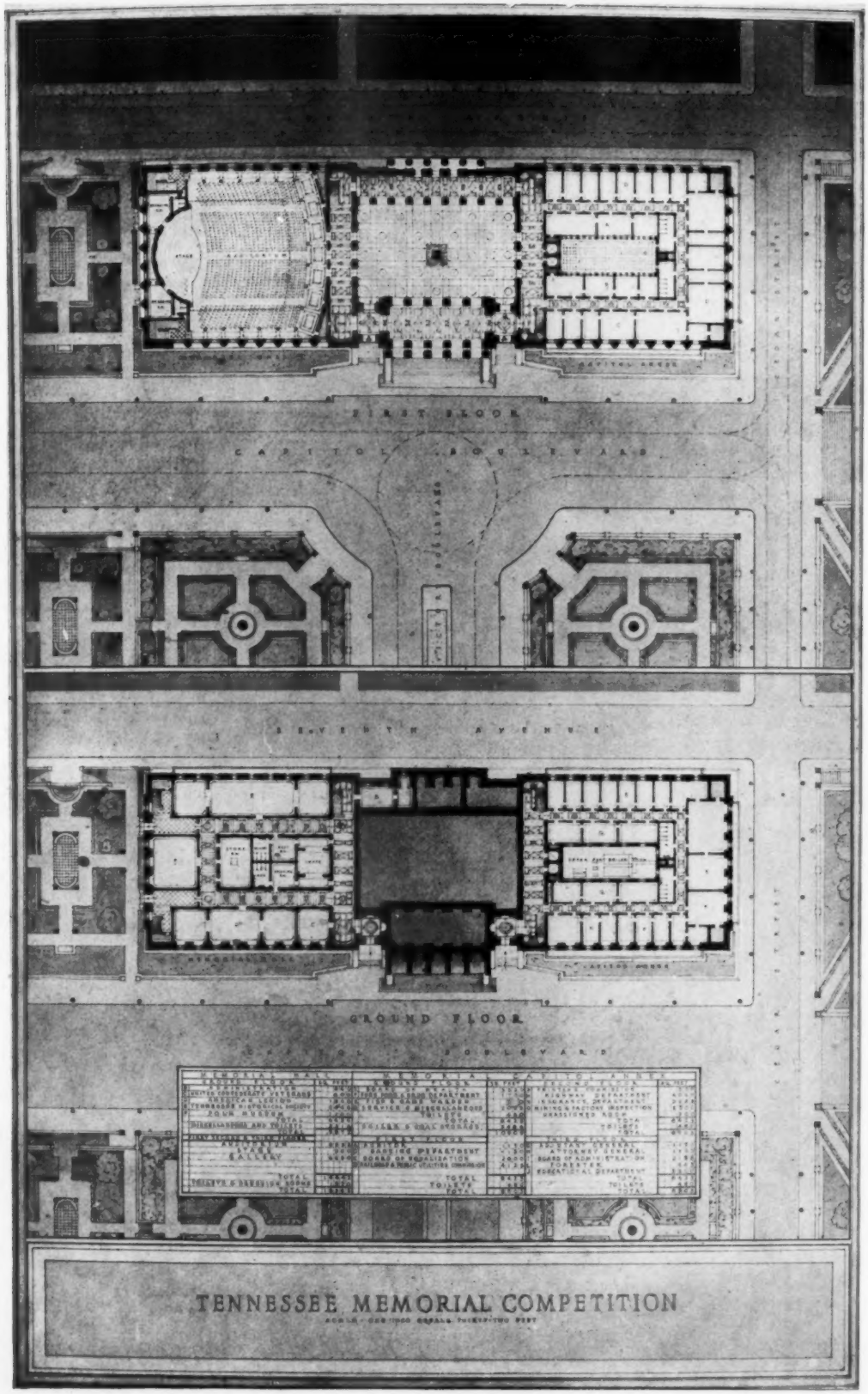
WALTER JOHN SKINNER, ARCHITECT

XUM



PRIZE WINNING DESIGN
TENNESSEE MEMORIAL COMPETITION
McKIM, MEAD & WHITE, ARCHITECTS

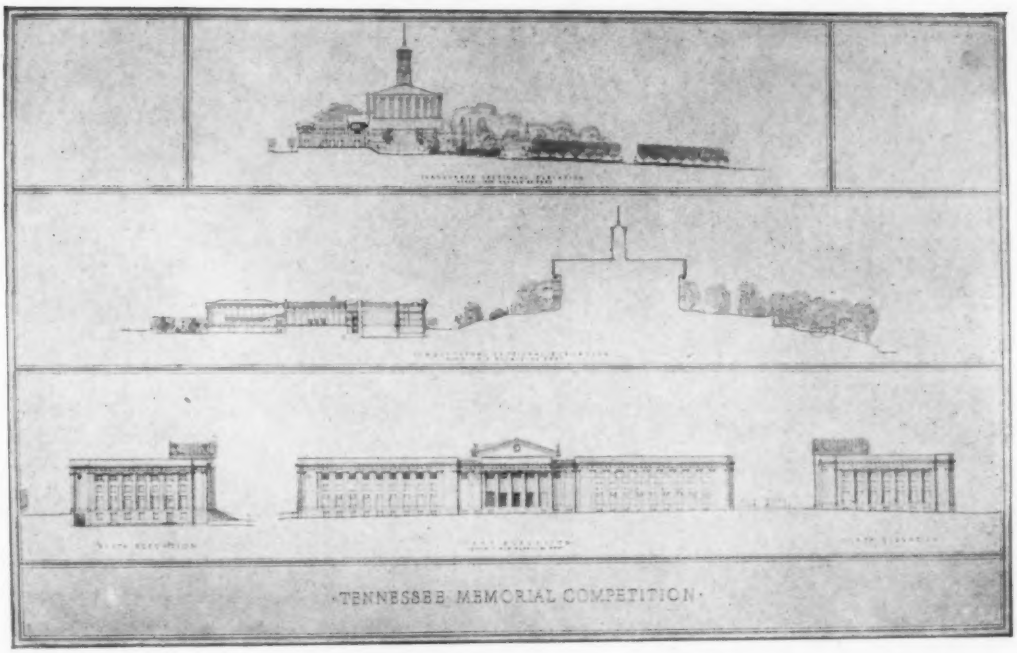
XUM

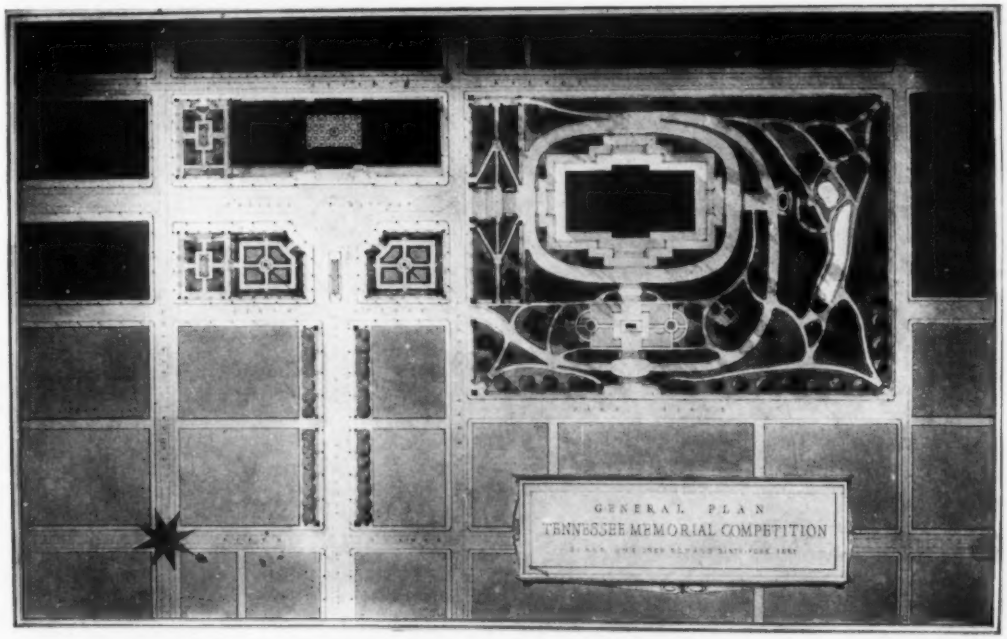


PRIZE WINNING DESIGN

TENNESSEE MEMORIAL COMPETITION

McKIM, MEAD & WHITE, ARCHITECTS





PRIZE WINNING DESIGN

TENNESSEE MEMORIAL COMPETITION

McKIM, MEAD & WHITE, ARCHITECTS

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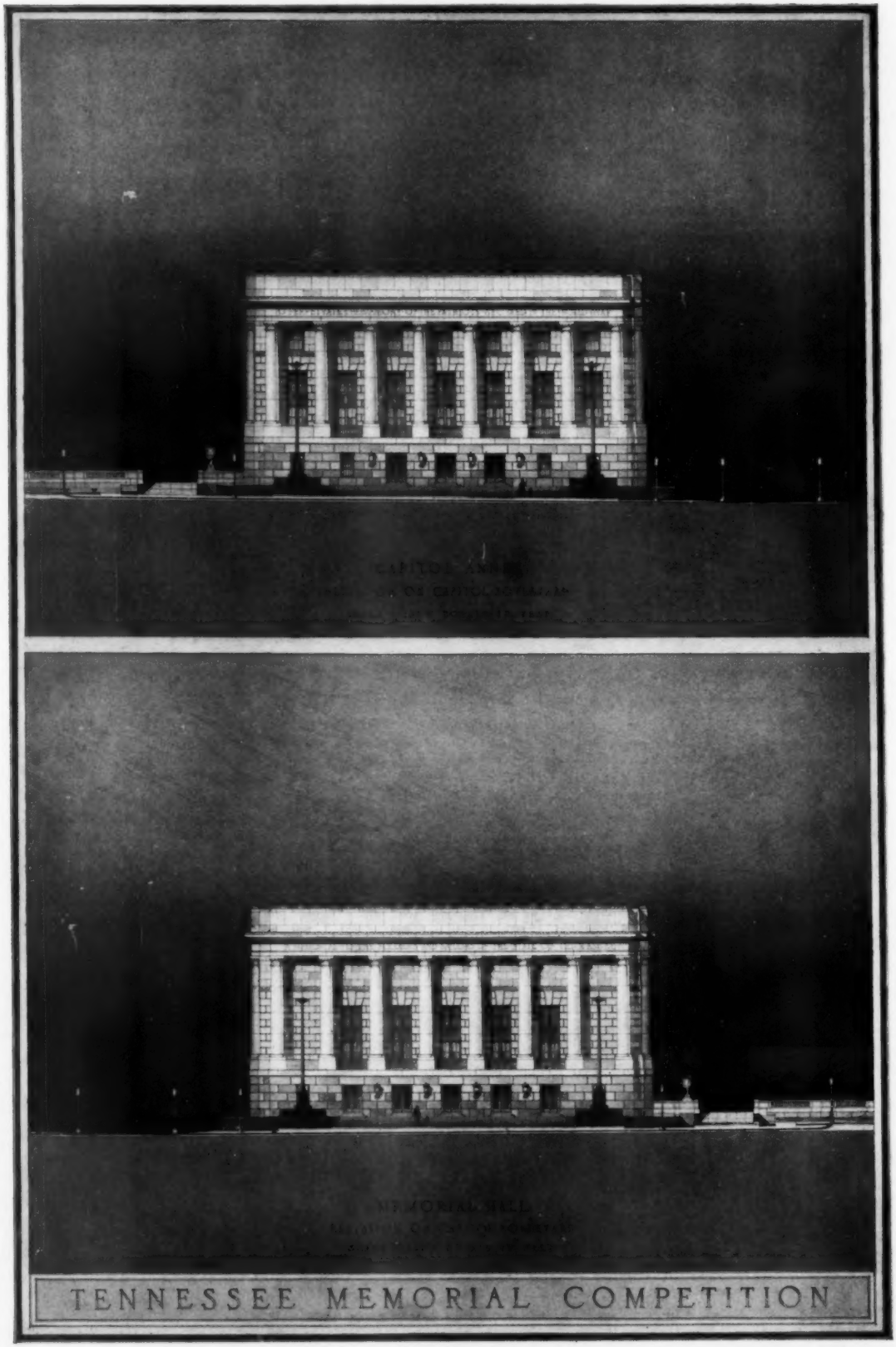

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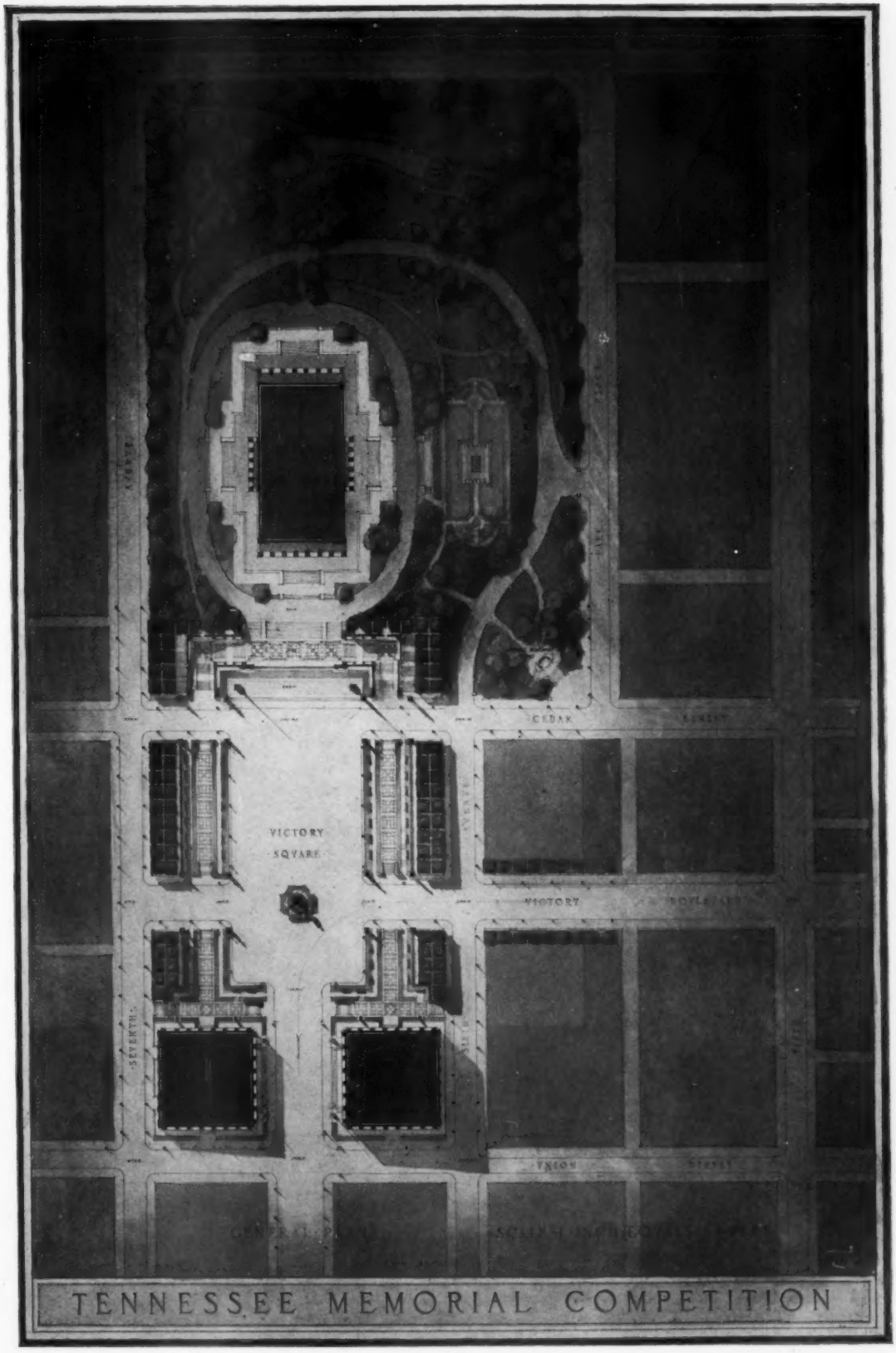
TENNESSEE MEMORIAL COMPETITION

DONN BARBER, ARCHITECT



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DONN BARBER, ARCHITECT

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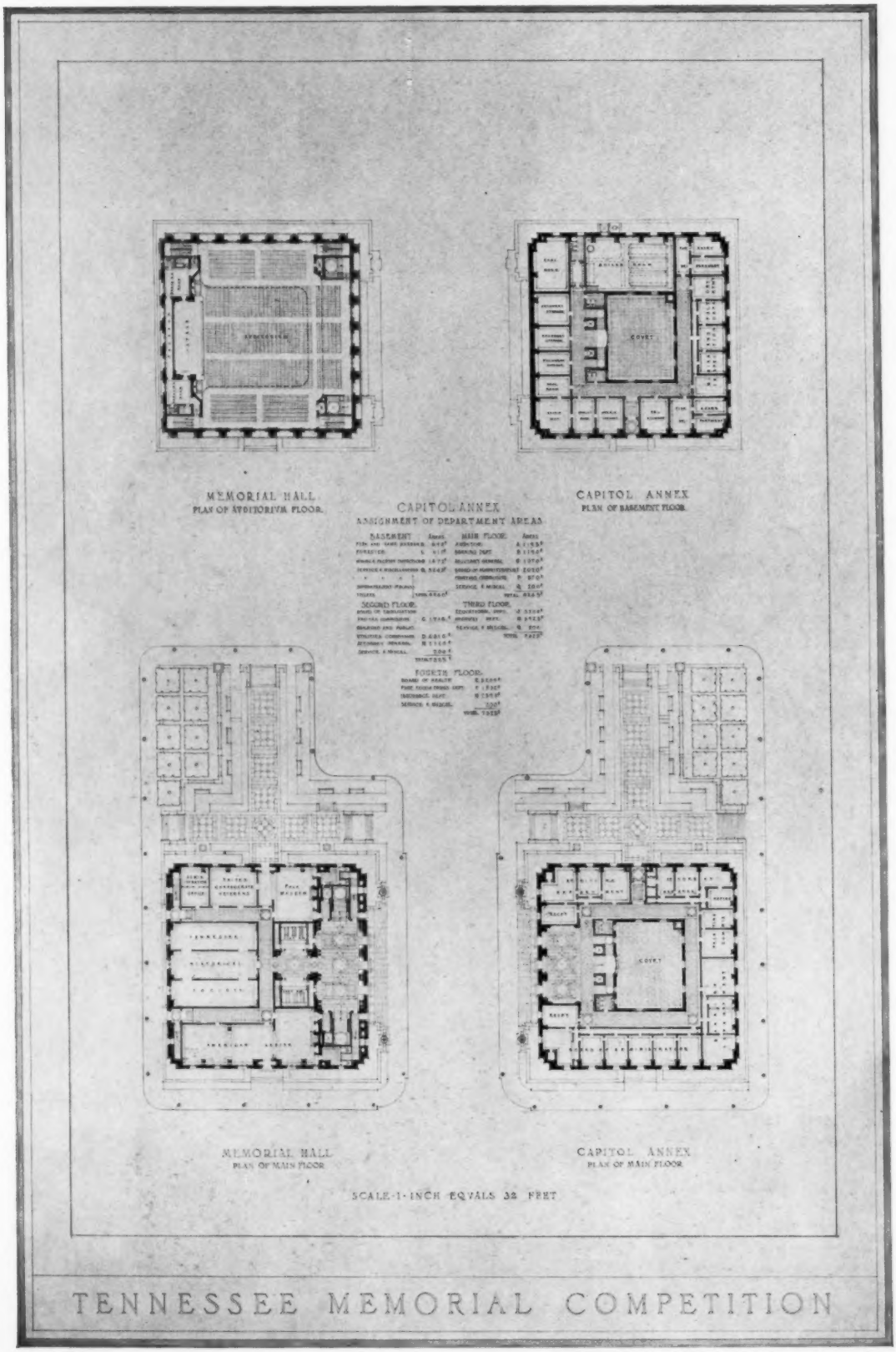

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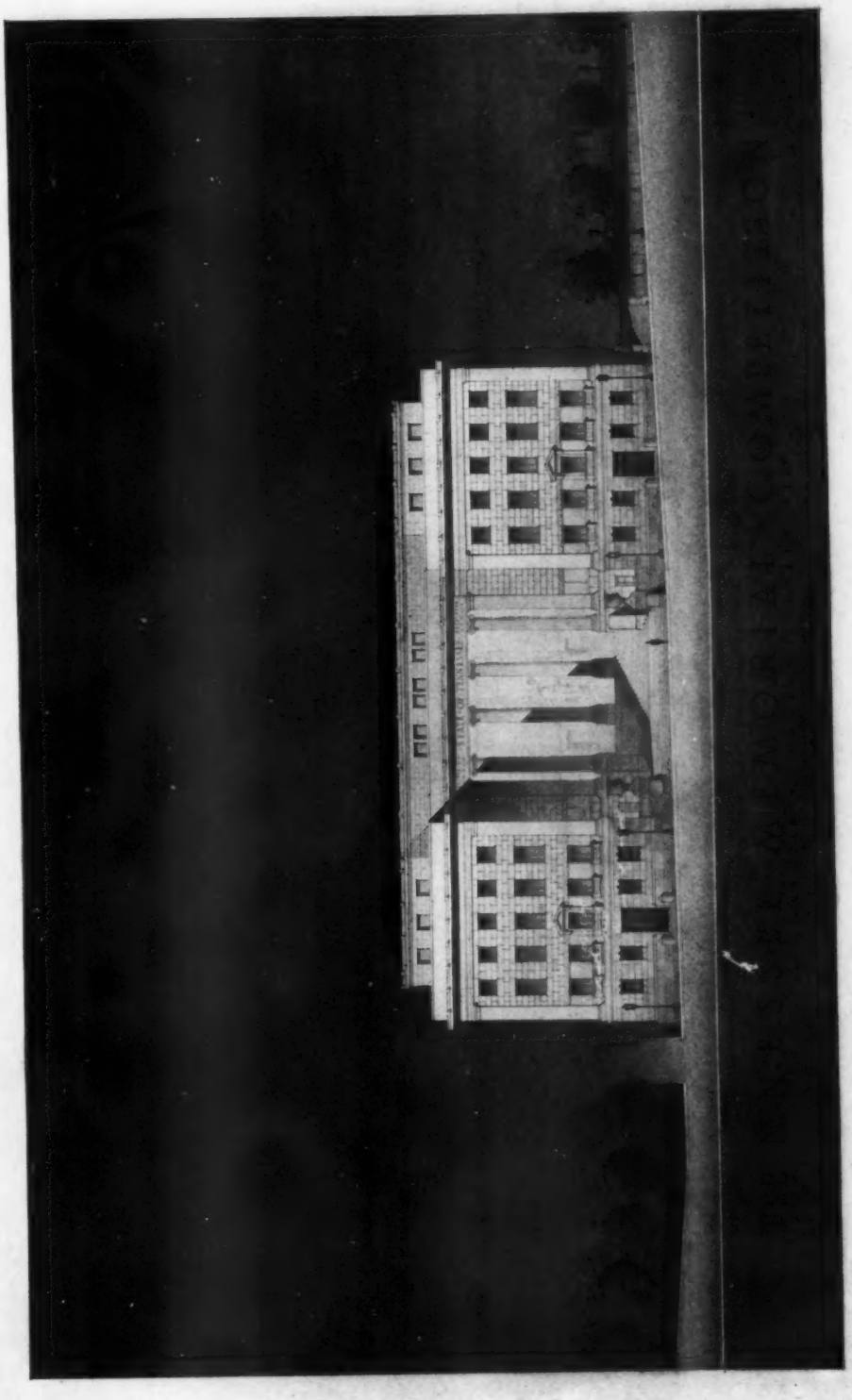
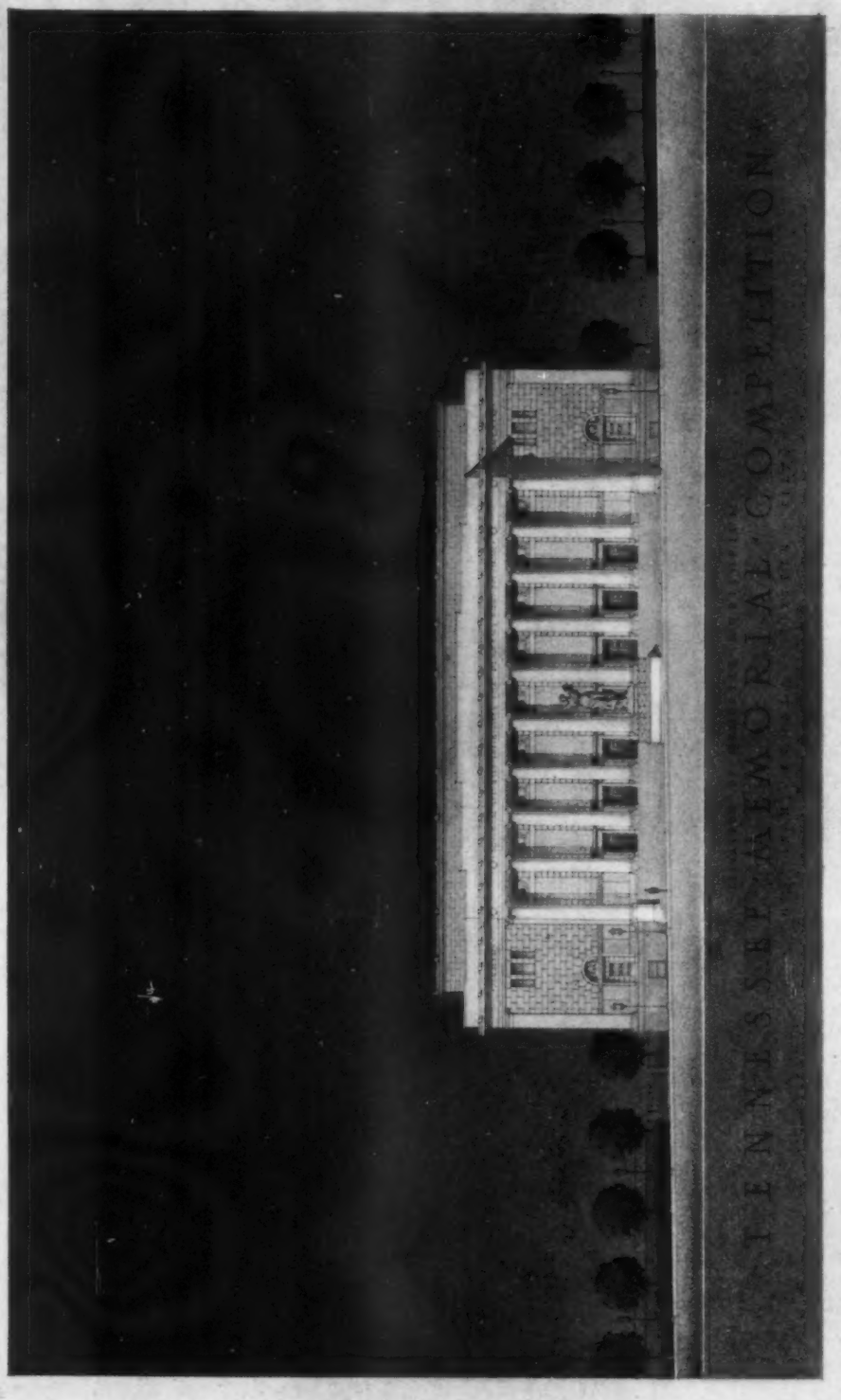
TENNESSEE MEMORIAL COMPETITION

DONN BARBER, ARCHITECT



3RD MENTION PLACED
TENNESSEE MEMORIAL COMPETITION
ARNOLD W. BRUNNER, ARCHITECT

XUM



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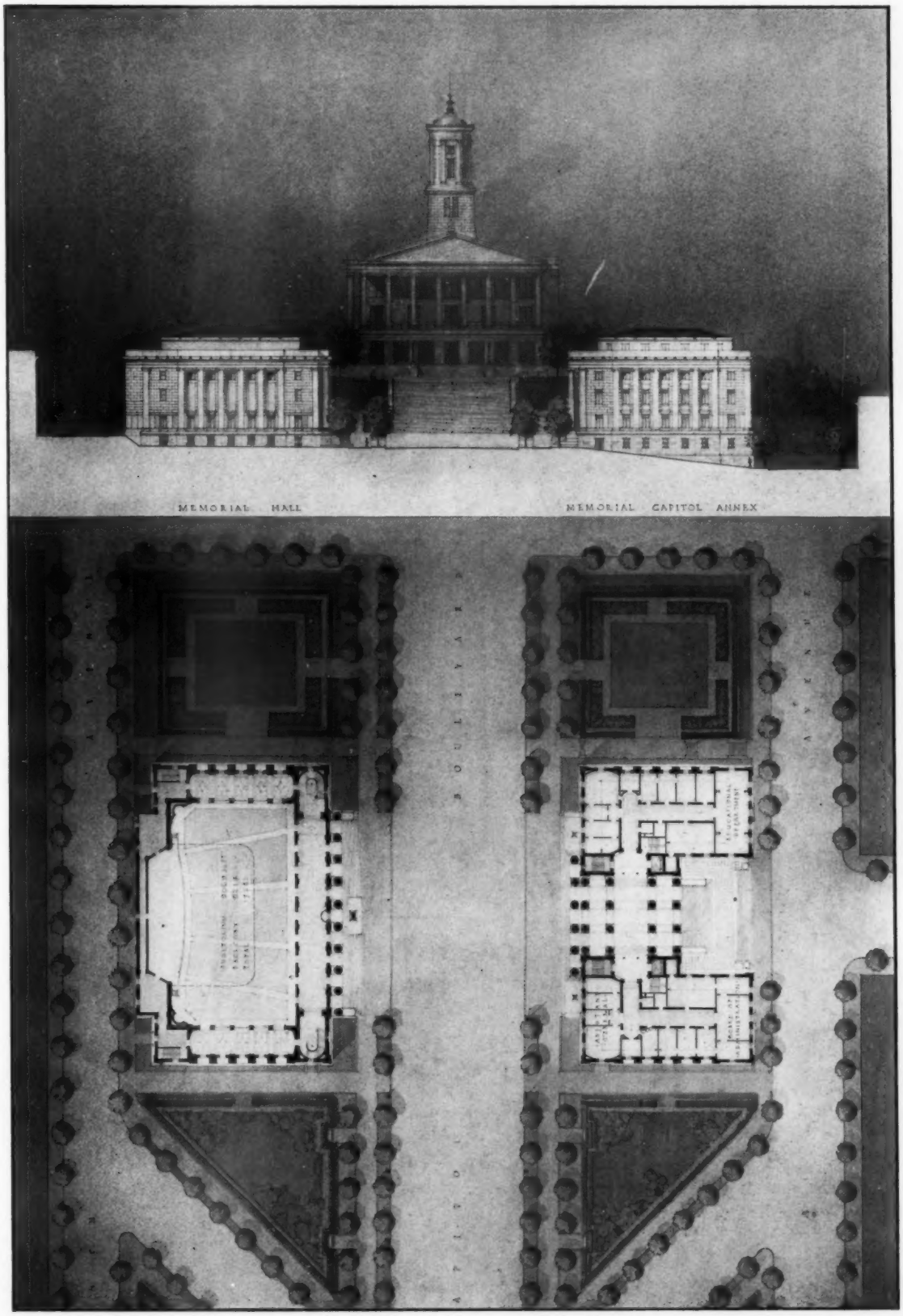
TENNESSEE MEMORIAL COMPETITION
ARNOLD W. BRUNNER, ARCHITECT



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ARNOLD W. BRUNNER, ARCHITECT

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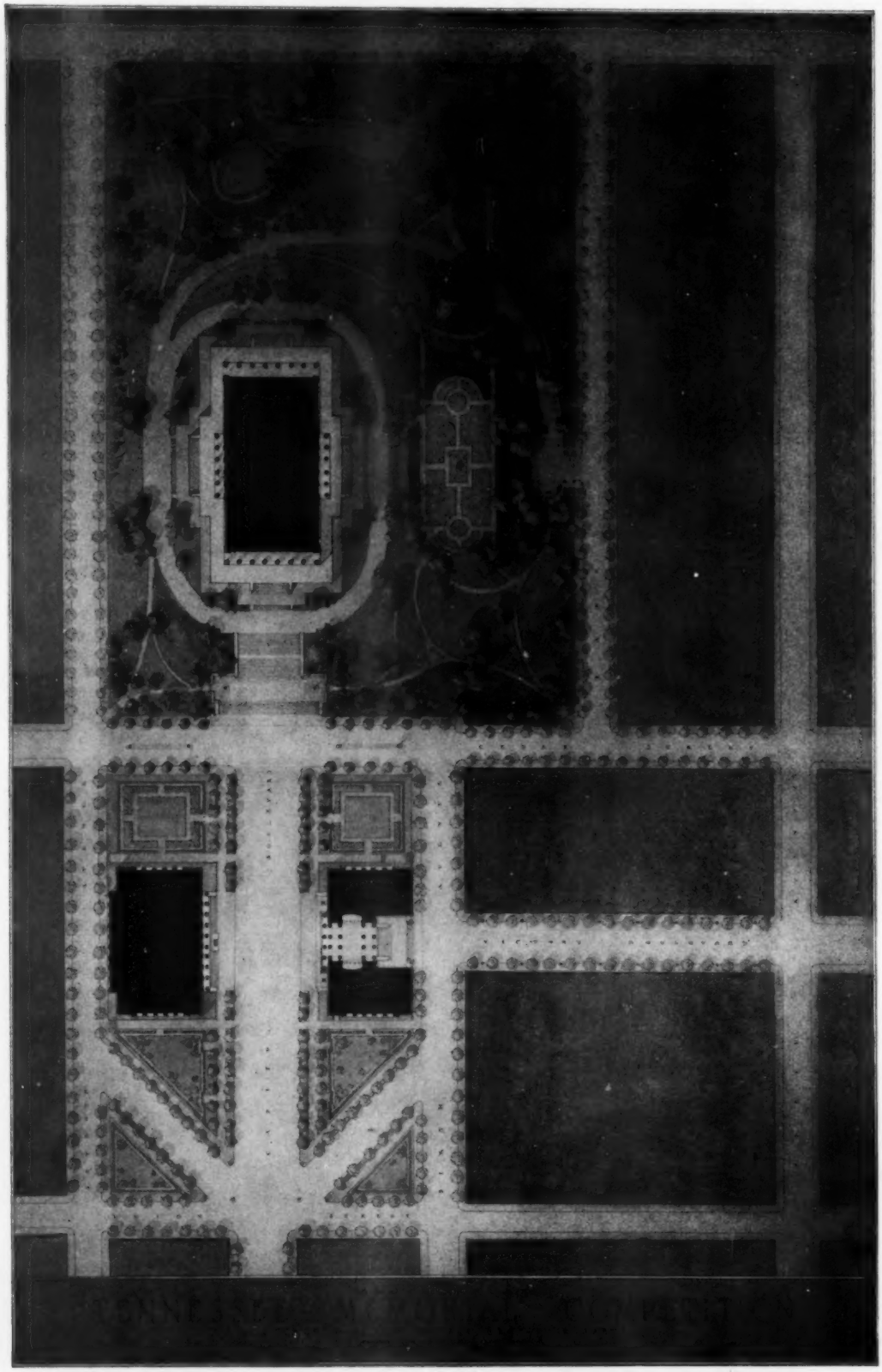

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ARNOLD W. BRUNNER, ARCHITECT

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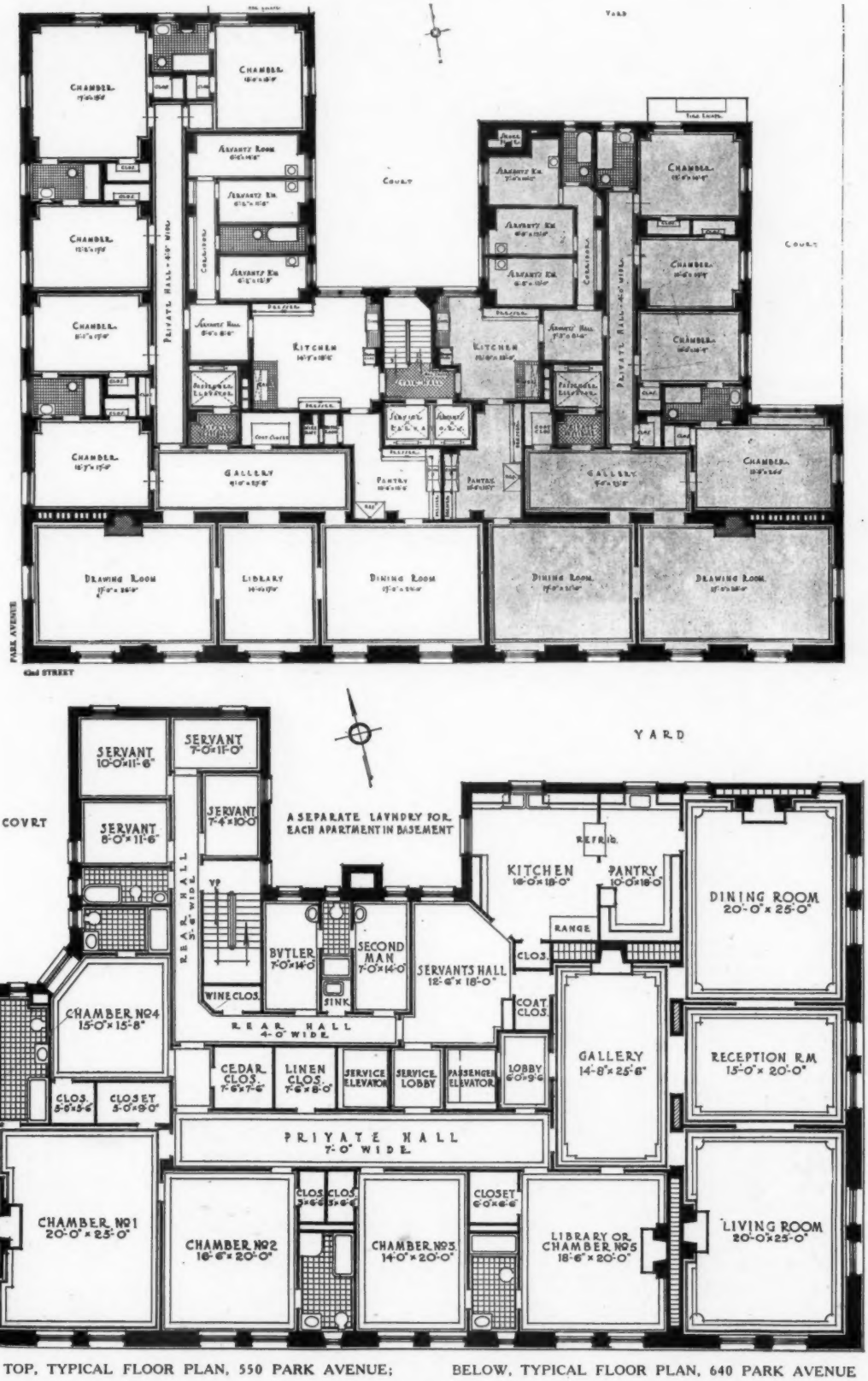
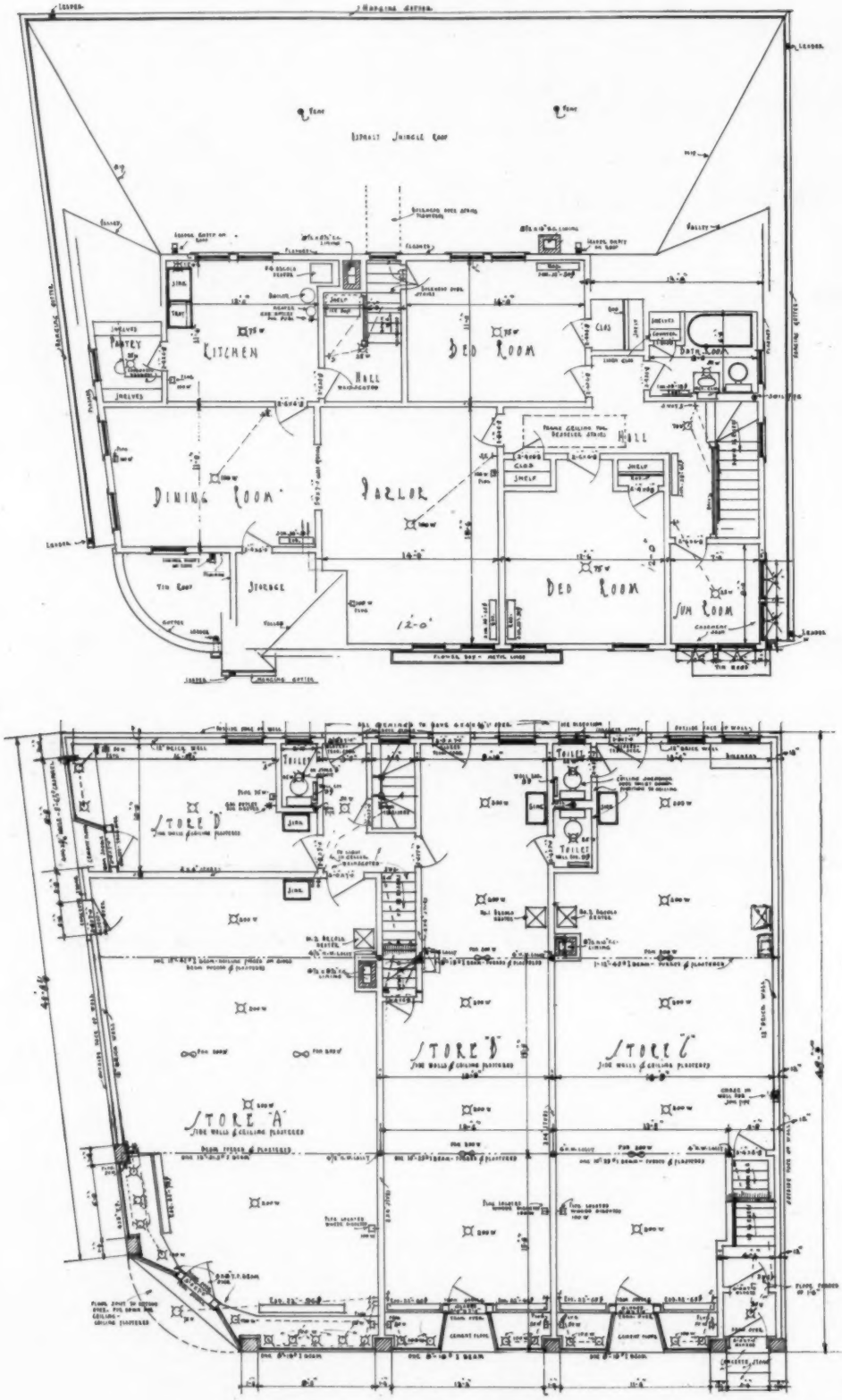


AT TOP, TYPICAL FLOOR PLAN, 550 PARK AVENUE; BELOW, TYPICAL FLOOR PLAN, 640 PARK AVENUE

TWO APARTMENT HOUSES IN NEW YORK, J. E. R. CARPENTER, ARCHITECT

(For exterior views see Plate Section)

XUM



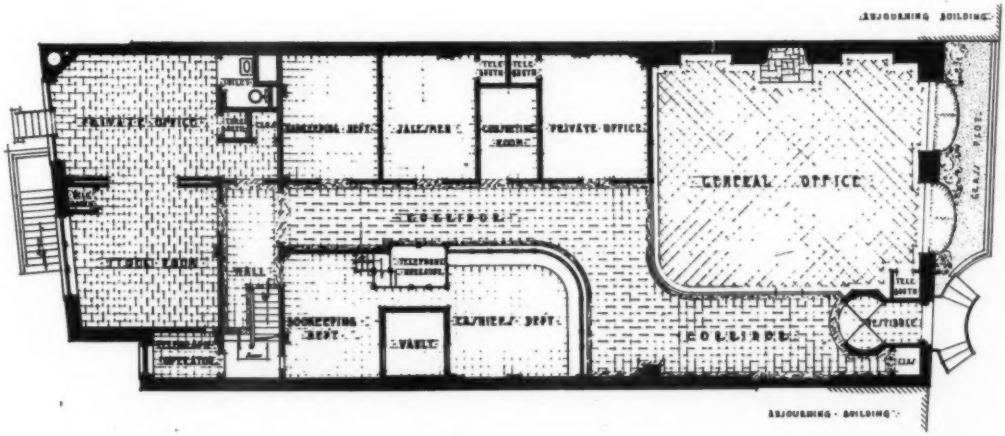
FIRST AND SECOND FLOOR PLANS

STORE BUILDING, WESTVILLE, CONN.

BROWN & VON BEREN, ARCHITECTS

(For exterior views see Plate Section)

TRANSVERSE SECTION



BANKING ROOM PLAN

BANK BUILDING FOR HINCKS BROS. & CO., BRIDGEPORT, CONN.

WALTER JOHN SKINNER, ARCHITECT

(For exterior views see Plate Section)

REVIEW OF RECENT ARCHITECTURAL MAGAZINES

BY EGERTON SWARTWOUT, F.A.I.A.

JOURNAL of the Royal Institute of British Architects, January. The ordinary run of book reviews are poor things at the best; they are given mostly to fulsome praise or violent condemnation, and are always apparently written with the presupposition that everyone has read the book. Usually few have read it, and no one else wants to after reading the review. But in this number of the Journal A. W. S. Cross, Vice President R. I. B. A. has written a review of Sir Reginald Blomfield's "History of French Architecture, 1661 to 1774," in which he frankly presupposes that no one has read the book; and, instead of dismissing it with a few words of criticism, he proceeds to give a very careful digest of what the book contains, with extracts from the text and with copious illustrations, and he makes it so interesting that everyone who has read his review will actually buy the book, or at least will want to. There is quite a detailed account of what is called the farcical competition for the completion of the Louvre, the commencement of the work by Le Vau, the visit of Bernini and the manipulations of Charles Perrault to secure the commission for his brother the doctor; all very interesting and well told. There is also a timely letter from Theodore Fyfe, F.R.I.B.A. on the proposed restoration of the Parthenon and the proposition advanced in the *Times* to restore the Elgin marbles to their former position, a ridiculous proposition which couldn't be carried out and shouldn't be attempted.

Our British brethren evidently take a great deal of interest in the Journal, as is shown by the numerous controversial letters which are published, and *mirabile dictu,* the whole affair is distinctly architectural and thereby a decided contrast to the pallid publication emanating from the Octagon.

From "The Architects' Journal," London

Projet for a Triumphal Arch to General Foch

The Architects' Journal, London, February 8. Our usual conception of an Englishman is a solid substantial person, conservative, sure and not easily carried off his feet by the whim of the moment. And when such sure-footed individuals do happen to get carried off their feet there is no half-way business about it; the thing is done with a thoroughness that is appalling. Just how sure-footed H de C, who contributed an article on the Art of S. Noakowski, ever was, is open to question, but there can be no question that he has been caught in the undertow of Bolshevistic Modernism and is well beyond the life lines. We have never heard of S. Noakowski before, but he is alluded to in the text as Professor Noakowski and is apparently from Poland, and it may be that the horrors of that devastated country and the uncertainty of the solution of the Upper Silesian question have wrecked an intellect none too strong at best. We reproduce a little thing of his which he hopes will be erected in Warsaw as a tribute to Marshal Foch. "Covered" says H de C "with a profusion of detail it is yet ruthlessly simple. You can feel its weight on your mind." We do. "Even the letters in the word FOCH discover a sort of architectural simplicity which accentuates the riot of ornament breaking like foam on the crest of the arch;" and again "Hardly ever before has one seen on paper, or in a building for that matter, so keen a conception of the fundamentals in architecture." It seems that not only has H de C

lost his footing but he has dragged down with him the conservative editors of *The Architects' Journal*. We are quite accustomed to that sort of thing here in some so-called Art Magazines which fall over themselves in their eagerness to publish pictures apparently made by a feeble minded child of six, and to devote scores of pages in explaining the hidden message, and the singing notes, and so on, but it is discouraging to find that sort of rot creeping into the architectural journals.

As a welcome palliative there is also in this issue a very clever and amusing but entirely wrong-sided letter from Lord Knutsford on the proposed demolition of the city churches in London. It is a pity that space will not allow the reproduction of this letter and the editorial comment on it, as it has to do with a matter of great interest to architects here as well as in England. The churches of Wren and his followers are too precious a heritage for London to destroy lightly. We have had an example of that sort of thing here in the destruction of St. John's, Varick Street.

From the *Building News and Engineering Journal of London, February* 10, comes the announcement of the award of the Gold Medal of the Royal Institute of British Architects to Mr. Thomas Hastings of New York. This distinguished honor will be appreciated not only as a personal tribute but as a recognition of the profession at large.

Journal of the American Institute of Architects, February. Under the heading Shadows and Straws, the Editor commenting on the report of the Sub-Committee on the Form of Memorial to Soldiers and Sailors to be erected by the City of Boston, writes of what he terms the tremendous difficulty of memorializing anything or anybody in this age, and says "Of course the plain truth is that the only real memorials are those which lie in the hearts of men, and so far as modern times go it is difficult to believe that any message can be carried far in this direction by any of the arts. It is a pathetic conclusion, etc." It is a pathetic conclusion; pathetic in its utter hopelessness; pathetic in its lack of faith in the world as it now exists; pathetic in its lack of confidence in the men of today, and in the ability of some to produce that which will stir in others the feelings of patriotism and devotion. It is the old pathetic story that has been said so often in every age, pessimistic criticism of the present and shrill-voiced fear for the future. Against the proposal to erect a memorial to Washington there were many such voices raised in protest and in discouragement, and yet who will deny the beauty and the significance of that simple shaft? The Boston Committee did well to insist that their memorial should not be a utilitarian project, and there can be no doubt of their success.

The Journal publishes a series of pencil sketches by Louis C. Rosenberg, some of which are excellent; and there are the usual articles on Social Reconstruction, on the Guilds and some Sociological Implications regarding an Industrial Suburb, all rather dreary and unrelated to architecture. Among the letters to the Editor there is one by F. L. Ackerman in which he refers to a review of the Journal in a recent issue of this magazine, and which being written in the late Owen Tudor style is a little difficult to comprehend. A goodly portion of the letter consists of a quotation from an address of President Harding on the Production and Distribution of Farm Products. The little group of earnest thinkers is at least consistent in its inconsistency. If it is quite the right thing to devote an architectural magazine to the expression of socialistic views, why not devote a letter of criticism of things architectural, to the discussion of facts relating to the Production and Distribution of Farm Products? The little group quite approves of Mr. Harding, and are really very nice about it, although they acknowledge "they would have been more precise in the choice of words." A copy of this letter, engrossed or illuminated and sent to the White House, would be a delicate compliment and would throw a little ray of sunshine into the cloudy affairs of State. Mr. Ackerman also seems disturbed by the use of the term "pessimistic socialism" and wonders what it means; not objecting apparently to the socialism but to the pessimistic. The editorial already quoted might serve as an example of what was meant, and also the following sentence from a second editorial in the present issue, which at least cannot be termed enthusiastically optimistic—"Is there not here a lesson that really must be learned by a Democracy, which after all can do what it wills and which very likely cannot survive unless it wills to do better than it has done."

The Architectural Record, February. Leon V. Solon continues his article on Polychromy and deduces that "the presence of color upon any sustaining item of an exterior elevation tends to depreciate its appearance of structure and strength" and that the Greeks obeying this rule confined their color to the supported, decorative and applied portions of their buildings. There is always a temptation to try to discover definite formulas for things that cannot be reduced to formulas. Attempts have been made to reduce poetry to formulas. There are formulas for composition in music, in painting, in architecture and the Lord knows what. Mr. Hambidge has shown conclusively, to himself at least, that Greek temples were designed by a rope, and Greek vases were carefully drawn on something or other in direct elevation before being turned. Mr. Solon's formula is deduced from the fact that the Greeks painted certain members and did not paint others, and that this, therefore, must have been the result of logical analysis. On this point we cannot agree with

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Mr. Solon. To our way of thinking the Greeks used color because it was an inheritance and because it was suitable to their climate and in conformity with their customs and chiefly because they liked it. All primitive races do. There can be no question of the wooden origin of their temple architecture, and with the traditional form they inherited the traditional color; and as the Greek entablature is an echo of the wooden prototype, so the color is an echo of the original earthen color daubed on the wood. If the Greek architect thought it would improve his temple to paint the columns pink with yellow spots he would have painted them pink with yellow spots, and never thought for a minute whether they were supporting members or not. He did not paint them because they did not need it; the shadows of the flutes were quite enough. He did paint the caps occasionally and surely these are as much supporting members as the shafts. It was natural enough to decorate the antifixes and acroteria, and the painting of the triglyphs gave richness to the frieze. Also it was considered the right thing; they always did it in the past; it was a convention, just as all Doric architecture was conventional. There may have been some religious significance attached to it. Now from an architectural point of view the use of color does not necessarily have a weakening effect on structural members. It is quite a customary thing to make the shafts of even large orders in colored granite or marble, and this certainly does not detract from their apparent strength. The Egyptians covered their columns with painted ornament and certainly the Egyptian column is not weak. No, the Greek polychromy was not worked out on such a system, or on any system except that of beauty and of convention, and this convention was generally adhered to because all Doric architecture was substantially the same; and the coloring was as uniform as the architecture. That the Greeks were right in adhering to this convention can be appreciated by an inspection of the Lincoln Memorial. Here is a large Doric order, treated freely, it is true, but comparable to the Greek temple in that it is not merely a part of a building; it is the building. If you stand in the peristyle and look up at the great expanse of white marble on the walls, the columns and on the coffered ceiling, you cannot help being convinced that the effect would have been finer had color been used. This feeling is increased when you go within the cella. The materials are rich and the scheme monumental but the effect is cold, almost unfinished. Until he had carefully studied the Lincoln Memorial, this reviewer was always sceptical as to the appropriateness of polychromy to classic work, and while he is not prepared to advocate it here to the extent the Greeks did it, he is convinced that more richness in color would generally be an improvement.

From "The Architectural Record"

Wing of the Driggs House, Waterbury, Conn.
Murphy & Dana, Architects

It gives us pleasure to reproduce from the Record a very charming corner of a wing of a house by Murphy and Dana. Frank Chouteau Brown continues his apartment house articles, and we notice on one plan that there is what is called an Orangerie adjoining a little turret or bay, in which is not a stair but a shower bath.

Lawrence Veiller asks "Are Great Cities a Menace?" and apparently thinks they are, and points to the Garden City as a way out, and shows how the wasted town of Welwyn can be and is to be made over into a beautiful modern town such as Letchworth. The photographs we herewith reproduce clearly show the great improvement.

The *February* number of *Architecture* has profuse illustrations of the Reconstruction of No. 1, Broadway, by Walter B. Chambers. This building was illustrated and commented on in the October 12, 1921, issue of this magazine and is a very skillful remodeling of an old building to new purposes—particularly as it was done without disturbing the tenants. The Booking Office

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is cleverly handled, and the inlaying of the conventional compass in colored marbles in the floor makes a motive that is decorative and appropriate to an office for the International Mercantile Marine.

Leslie W. Devereaux seems to consider that the "Condition of Modern Architecture" is similar to that of Rome, and that there is an individual tendency in modern design and quotes extensively from Viollet-le-Duc and Mr. Van Brunt's essay on the Discourses on Architecture by the eminent Frenchman, and arrives at the conclusion that construction is divorced from art, and architecture is a mere envelope, etc. It would seem from the article that Mr. Devereaux has a false impression of Roman architecture. The Roman was a practical man and a scientific builder it was true, but he was also a highly trained architect, and in his knowledge of architecture much further developed than the Greek. He carried the art of planning to an extent never dreamed of by those who had gone before and seldom equalled by those who have come after. There was an element of grandeur in all that he did and a breadth of feeling and an appreciation of composition that was remarkable; and his architecture was entirely logical. He knew how to build vaults for the support of his buildings and he knew how to design them so that they would have a monumental effect. His architecture was not wire lath and plaster hung from iron beams that had no relation to vaulting below. His vaults were real; the coffers were not only a decoration but part of the construction, and the ornament afterward applied was entirely incidental. The interiors were impressive without any decoration at all as we can easily judge from their ruins. With the Romans, therefore, art or rather architecture, was not divorced from construction; it was construction. There has been a lot of unintelligent criticism of the Romans because they used the orders as applied decoration. Of course they did; so did the Greeks; so did every nation who used orders. For an order is nothing but the artistic development of a point of support. The peristyle of a Greek Temple was not a structural necessity; it was an ornament, and it has been many times pointed out the order in its perfection is not a logical expression of anything in particular; it is a beautiful convention in stone of an original in wood. If we should ever start an application of pure logic to architecture there would be little architecture left.

And just as the Roman architect made use of construction and fitted his design to the construction and the construction to his design, so we suppose the modern architect should do with his steel frame buildings. The trouble is he usually does not know enough about construction to do it. He accepts the steel frame as an accomplished fact and covers it with a veneer. The new zoning law will prove a great help, and has already. The steel frame will be laid out by the architect and not by the engineer. What Mr. Devereaux has to say about the growth of an individual instead of a national or chronological style is probably correct. The development for the last fifty years has been largely individual and will probably become more so.

From "The Architectural Record"

Welwyn as It is

From" The Architectural Record"

As Welwyn may become

The Architectural Forum, February. Costen Fitzgibbon has a rather apologetic article on Baroque, Justice and Common Sense, which is interesting and well illustrated, and there are some measured drawings of Italian Iron Work by F. Nelson Breed, which are worth preserving.

Spokane is determined to be proud of her architecture and has appointed a jury to prepare a list of the most notable examples of architecture in that city, which has been done, and the findings are published in this number of the Forum. Our sympathy goes out to the jury. The Hutton Settlement House by Whitehouse and Price is good but we do not imagine visitors will be attracted to Spokane by the rest of the exhibit except perhaps

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to wonder why an architect should build for himself in this country a Swiss chalet, complete even to the stones on the roof. Under the heading of Decoration and Furniture there is an article on English Georgian Domestic Precedent which is well illustrated and there is a continuation of C. Stanley Taylor's article on Professional Charges.

The Architectural Review, London, February, has as a frontispiece, a colored reproduction of a spirited sketch by William Walcot and there is a very interesting article on Rye in Sussex, a quaint old seaport, now a seaport no longer, as the ungrateful ocean has receded some three miles and left it stranded in a marsh. The old houses that are illustrated might easily have been the originals of those clever drawings of Will Owen which illustrate the tales of W. W. Jacobs; and one can easily imagine the streets peopled with the characters he so vividly portrays. There is a short record of Saxon Survivals in the Smaller English Churches, and a sympathetic article on the work of the sculptor Antoine Louis Barye.

The Architect and Engineer, San Francisco, February, publishes the drawings submitted in a competition for St. John's Church, Los Angeles. To judge from the program the vestry were quite uncertain as to just what they wanted, but they say in large type that they are more concerned with the acoustics than with the style of architecture, adding however, that as the Mission style has been appropriated largely by the Roman Catholic Church of Lower California, they wish something that would suggest an Episcopal Church to the stranger as he passes. And with that idea doubtless in mind, they selected the scheme presented by Pierpont and Walter S. Davis, done in North Italian Romanesque, a style which everyone knows was never used by the Catholics. Perhaps it was the acoustics that influenced the jury. Allison and Allison have a rather interesting Gothic scheme but all in all the premiated design is probably the best, although one might wish that the transepts were lower and the roof or dome at the crossing was more prominent. The plot plan is cleverly arranged and the general effect should be excellent. It would seem from the drawings published that a large scale rendered detail was called for. This is nonsense in any competition, and tends to put a premium on draftsmanship. Not every office is equipped to produce such a drawing, and the temptation is to elaborate it unduly, and such a large drawing well rendered carries an unfair weight with any jury, particularly a jury largely composed of laymen.

Gate House, Eaton Hall, near Chester, England

(From a Photograph by Robert M. Blackall)

DEPARTMENT OF ARCHITECTURAL ENGINEERING

WHY BUILDINGS FAIL TO STAND

A Review of Recent Building Failures and the Lessons they Teach

A GENERATION ago some buildings in a large eastern city fell with such fatal consequences that it was thought for several years that Buddensieck, the name of the builder, was to be a permanent addition to the English language to express shoddy construction, just as Colonel Boycott gave a name to express passive resistance.

Years passed and the name of Buddensieck was forgotten but pulling the wool over the eyes of building department officials continues to be a popular game with a certain class of men engaged in the building business. About four months ago there was a collapse of steel work in the roof of a theater building under construction in Brooklyn, N. Y., and seven men were killed. In the investigation that commenced very soon after the accident a judge was reported to have expressed great surprise that the plan examiner in the building department received a salary of less than $2,000 per year. "A man occupying a position of responsibility such as yours," he is reported to have said, "should have a salary of not less than $10,000 a year." All the blame was of course put on the man who had to examine the plans in order to see that the designer had not violated common engineering principles.

During the investigation which ended with charges of manslaughter against four men the newspapers from day to day reported interesting developments in the case. Not the least interesting was that the owner, who was doing the work himself without employing a contractor, actually had no permit for the work. The inspectors, according to newspaper reports, seem to think it nothing out of the way to discover buildings going up without permits and taking charge from that time. The reports indicate further that the owner submitted plans for the steel work to the examiner and they were rejected. These rejected plans, with some very slight changes, seem to have been put into a structural shop and were built. The examiner was apparently a hard man to satisfy but finally he approved of some plans, not knowing that the steel was already fabricated and partly erected. These facts seem to show that the underpaid man did all that could be expected of him. Had he alone been responsible there would have been no accident.

Investigation showed that the architect was employed merely to prepare the plans, the owners relying upon the city inspector to see that the work was done in a proper manner. The inspector was an "experienced building mechanic" without sufficient knowledge of steel work to know that things were not right. If he did possess such knowledge the accident could not have happened. The papers contained amusing stories of how the foreman of the steel workers shoved some loose pieces of steel under the end of a column in order to make it long enough to reach the truss it was to support, these pieces of steel being grouted in, as much to conceal the poor job as to level up the bearing under the column base. The lesson in this incident seems to be that plan examiners should be permitted to go out occasionally and assist the inspectors. It would seem to indicate also that inspectors and policemen who permit buildings to be erected before permits are issued are not good public servants. It would indicate that building department officials who are in the habit of granting temporary, or provisional, permits so contractors may proceed while plans and detail drawings are being made, should be retired permanently to private life. It would indicate also that architects, contractors, inspectors, policemen on the beat during the time buildings are going up, as well as the heads of building departments and their divisional heads, should be held strictly responsible to the public and to the families of victims, for all accidents that occur which may be traced to carelessness, if not to incompetency or dishonesty. Under the present unsystematic methods of handling such affairs the owner alone suffers. It is possible in the majority of cases to show that pressure from owners lies back of building accidents, but if the officials and the technically trained men were held equally responsible be-

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cause of their supposed better knowledge, it would be impossible for owners to take chances.

The dust of the Brooklyn disaster was still clouding the air when the roof of the Knickerbocker Theater in Washington, D. C., collapsed with the loss of 98 lives. That it occurred on the night of a heavy snow storm is now generally believed to be largely coincident, for a failure was bound to happen some time. The snow load on the night of the disaster could not have exceeded an average of 15 lb. per sq. ft. and it is barely possible that this additional load may have been the proverbial last straw. The live load required for roofs in that city is 25 lb. per sq. ft., which means of course that a breaking load would be more than 100 lb. per sq. ft.

Reports received on the architect and engineer prove that they could have received licenses to practice their respective professions, had such licenses been required in the District of Columbia. The steel designers and detailers in the employ of the contractor were also competent and possessed of sufficient experience to have warranted them in being licensed. The most significant statement in the public press is that the steel framework for the roof was in place before the designers in the employ of the steel contractor were able to have their design and details approved by the plan examiners in the building department. If this is true it shows that the roof was not erected according to approved plans.

Fig. 1. Plan of auditorium of the Knickerbocker Theater, Washington, D. C.

The architect employed an engineer to design the roof framing; the plans, which called for plate girders and deep beams, were approved and the contract was let. The successful bidder for the steel work claimed it was going to delay him considerably to follow the plans of the engineer so he asked for, and obtained from the architect, permission to substitute trusses. The statement is made that the architect permitted the change subject to the approval of the new plans by the building department and that he did not check them himself nor ask any engineer to check them. Public reports further indicate that the first plans submitted for the change were rejected because of several shortcomings and more than one set of drawings found their way to the office of the plan examiner before final approval was given. The truth of the many statements printed will be brought out in the trials which will follow the indictment of individuals connected with the work.

The building was in use for about four years. This alone seems to prove that the accident was caused by an overload of snow. The most plausible explanation is that faulty details caused a progressive giving way which was not apparent because it was in the upper chords of the trusses and therefore no cracks appeared in the ceiling. Last summer, four years after the building was erected, the balcony was extended about 18 in. in order to permit the putting in of two additional rows of seats. It is reported that the steel supports of the balcony were not reinforced when this extension was added. The interior of the theater was then redecorated and if any cracks were seen they were not reported by the decorators. Investigators reported that one of the columns had a covering of mortar much thicker at one end than at the other and that this thickness was on one side. If this is true it would indicate that the column was not vertical and there are not wanting men who say that the plasterers told friends that the column was not plumb and they made it appear plumb by means of plaster applied where it would be most effective in concealing the faulty steel erection.

The Washington Star printed in the issue of February 6, 1922, an article by Mr. T. L. Condron of Chicago, who made an examination of the building. Mr. Condron stated that the investigation showed him conclusively that "accepted principles and practices of engineering" are not unsound, but that the neglect of the most elementary practices and principles led to the disaster. In another part of his article he said, "This theater is a startling example of how interior decoration and exterior beauty concealed faulty construction and gave a false sense of safety and security to thousands of patrons." He made no reference to the fact that this disaster gave an excuse to politicians to put many hundreds of needy supporters to work as inspectors to examine theaters now in use in many American cities. Similar examinations, with the class of men employed in the majority of cases, would not have revealed the dangers that existed in the building that failed and it was a sheer waste of public funds to make such farcical examinations to ease the public terror then existing. That many theaters were closed temporarily as the result of even such pretenses of

technical examinations shows what a bad state of affairs must exist today in many buildings used for public assemblage.

Mr. Condron said the roof slab was strong enough to carry two feet of snow, thus effectually disposing of stories printed in some quarters with the intention of discrediting reinforced concrete. The cuts here presented are copied from those made by Mr. Condron to illustrate his report. Fig. 1 shows the general arrangement of the framing, the double lines representing trusses and the single lines the beams supported on the top chords to carry the roof slab. A suspended ceiling was attached to the bottom chords of the trusses. The north end of Truss No. 11 rested on the curved wall and the south end rested on Col. 2. The first item to criticize is the fact that Col. 2 ended at the ceiling level about six or seven feet below the roof and it was not stayed to the west.

Col. 3 extended to the roof and at the level of the ceiling a 10 in. I beam was put in to tie Col. 2 and Col. 3 together. It is stated that this tie was not a part of the original design. The three roof girders meeting at a point vertically over Col. 2 rested on a small vertical strut not connected rigidly at the base. This strut did not rest on the column but rested on the end of Truss No. 11 which was carried on the column. Fig. 2 shows these details and it is well to call attention to the fact that all connections in the field were made with bolts instead of rivets. Bolt connections may be safely used in many places but they should not have been used where they were in the roof under criticism. The vertical strut was connected to the truss by two bolts.

The connections at the ends of B-41 are examples of how such work should not be done. At Col. 3 the end of B-41 rested on a 12 in. channel which was not fastened to the column. When the shock came the beam pulled it over as indicated by the dotted lines. The west end of B-41 was connected by means of a bent plate which was bolted to a 10 in. channel attached to the insecurely fastened vertical strut above mentioned. The 10 in. strut from Col. 3 to Col. 2 was held in place by two bolts which attached a bent plate to the lower flange of the main truss.

No cap plate was used on top of Col. 2. On the underside of the truss resting on this column a groove had been worn. This was taken as indicating that deflections and temperature changes had actually caused measurable movement with corresponding wear at this point, where the reaction amounted to nearly 75 tons. The other end of the truss rested on a short section of beam to which it was not attached. The wonder is not that the truss finally slipped off but it is more wonderful that the roof stood more than four years.

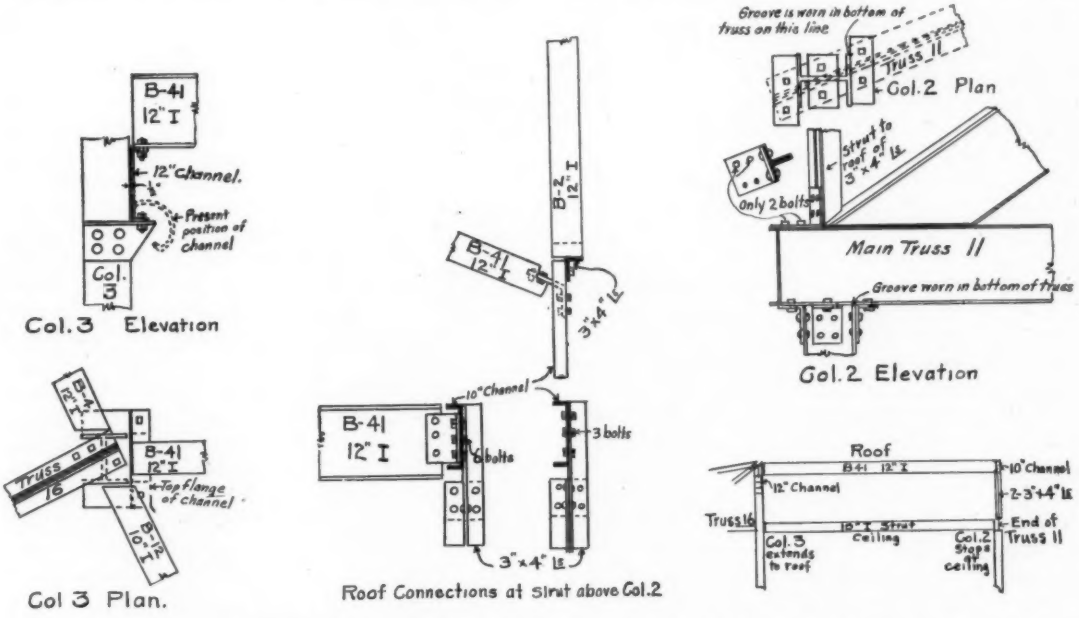

Fig. 2. Sketches showing some details which may have been the cause of the collapse of the roof of the Knickerbocker Theater

Defects in the detailing claimed to have been found by other engineers showed that the upper joints at the ends of the trusses, and especially in the main truss, were not stiffened by cover plates extending over the joints, so that the gusset plates had to carry all the side thrust delivered to these joints. This would cause a gradual giving way which would affect only the roof members until the time arrived when an added "kick" would push the main truss off the wall seat and cause a collapse. This evidently happened, for all ac-

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counts seem to agree that the first notice of the roof falling was when the end of the main truss dropped off the wall. The end of the truss should have been bolted to the wall or, better, have been supported on a wall column.

Mr. Condron criticized the bolting of truss No. 11 to the top of Col. 2 as it caused large bending stresses in this column, due to the deflection in the truss. Beam B-41 was overloaded yet it was poorly connected. Had this beam failed through overload it would have buckled sidewise, pulling the top of the channel on which one end rested, over until it collapsed. This would have caused B-41 to pull the vertical strut over Col. 2 towards the east. The 10 in. ceiling strut between Col. 2 and Col. 3 would restrain Col. 2 from falling in that direction, with the result that it would be carried south and slightly east, as was the case. This would instantly pull the main girder off its wall support.

The north end of the main truss was pulled off its bearing on the top of a twenty-inch I beam, that simply rested upon the wall, without tipping the beam over, which indicates a very sudden action. As this truss fell it did not scrape down the inner face of the wall, but cleared it entirely, showing that the movement was not toward the north, nor even straight downward, but toward the south. None of the beams or trusses were bolted to their wall bearings, from which they readily moved when the collapse began and the unstable condition of the two slender columns, Nos. 2 and 3, offered no resistance to the first crippling force, which Mr. Condron believes developed in the beam B-41. If the failure started by beam B-41 giving way then the heavy snow-fall caused the roof to fall.

The lessons from such failures are old lessons. An old Scotch chief draftsman had a habit of saying to his assistants, "Make it eye-sweet," and no job left his office until it had carefully been looked over to see that it looked right. It is a good plan to follow in all work. Merely bolting or riveting steel sections together is not sufficient; the proportioning of parts is all important. Connections must be rigid; beams and girders must be stayed so they cannot bend to one side or to the other. Columns must not be too slender and when trusses rest on the ends of columns the proper design is determined by the degree of fixity at top and bottom. Look the drawings over carefully and when in doubt make some computations. Take no chances. Tie the work together, or so design the joints, that they will resist forces from every reasonably conceivable quarter. Do not permit the steel contractor to substitute anything without the signed approval of the original designer, after he has had time to make a full check of the computations and drawings. Place no reliance on the ability of the average municipal inspectors and, above all, do not allow work to proceed until the building permit is issued after approval of drawings by the plan examiners. A copy of the building permit together with a stamped set of approved drawings should be kept on the job. Common sense is the most valuable asset a man can have and if the dictates of common sense are followed there will be no accidents.

ELECTRICITY IN THE HOUSE

III—THE DINING ROOM

BY M. O. WHITTEN

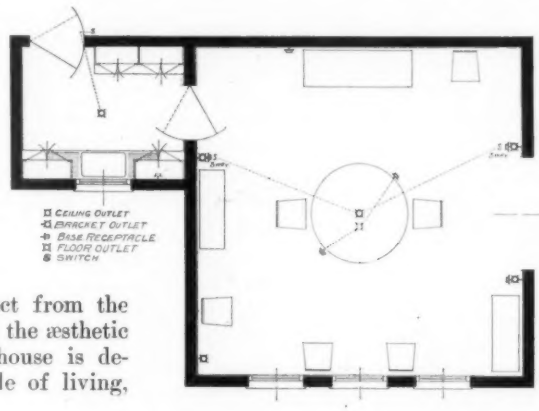
QUITE a few years ago, when living was in some ways less complex than at present, the writer can recall an applicant for position of cook, who demanded what was then considered a very high figure for her services. This, she explained, was because, in addition to her culinary ability, she was particularly skillful in carving, and expected to exercise that skill in her employer's behalf, "for I've found," said she, "that the more they pay, the less they'll do."

In the thought, if not the words of the late lamented Captain Cuttle, the point of this anecdote lies in the application of it, which in this case, is to the subject of electric wiring for the dining room, and the inadvisability of letting the wiring plan be too much affected by what may be only the passing fad of the moment. Thus, the tendency at present in the fashionable dining room, is to assume that wherever possible, carving and serving be relegated to the kitchen, and that accordingly, lighting need be provided only for the purposes of graceful conversation.

Thus, not so very long ago, the writer was shown the plans of a dwelling in a building designed to be the latest word in the modern, high-priced apartment. The large dining room was illuminated only by two double candle brackets, for, as was explained, "people of that class have only candles on their tables, and everything is done in the kitchen." Shortly after that, the

writer happened to learn that a certain lady of ample means, living in this apartment, had betaken herself to a cooking school, to prepare herself for emergencies, because of the scarcity, uncertainty, and unreliability of cooks. As waitresses are also known to be subject to similar aberrations of temperament, the writer cannot help wondering if the owner of that same apartment would not be better pleased with a dining room adequately wired, so that confronted with a domestic emergency, she might be in a better position to meet it.

This brings us directly to the question of dining room lighting. Shall the architect conform literally to the present vogue of candle-lighting, or shall he view the subject from the practical as well as from the æsthetic standpoint? Where a house is designed for a liberal scale of living, the writer believes that a fairly satisfactory compromise can be arrived at, by omitting any central lighting fixture, but providing the necessary wiring, in case one should be wanted later on. This could be done very inconspicuously by having the needed small opening neatly capped over; or, better still, the small break in the plastering could be filled in, so that when the ceiling had been kalsomined, there would be no visible trace whatsoever of the wiring beneath, which, however, could be easily reached if occasion required it. Thus, should the family fortune fail, or a change of ownership ensue, or even, should fashion shift, it would be possible to install a central fixture with very little trouble and expense.



A dining room and pantry wired to minimize the discomforts of a home without servants

In selecting a dining room for the purpose of illustrating its proper electric wiring, the writer has been guided more by actual realities of household service at present, than by one's theories of the kind of household staff that would be maintained by a family in comfortable circumstances. In many ways, the designing of houses has been modified to meet present day living conditions, and it seems much better to admit it, and to furnish a wiring layout planned to supplement the shortage in the domestic labor market.

The dining room thus chosen as fairly typical of the modern, well-built house, is 15 feet square, and is lighted by ample window space on the south side. On the east is the broad entrance into the hall, and on the west, the door leading into the butler's pantry and kitchen. The north wall is unbroken. The furniture arrangement is conventional, with the table in the center, the sideboard in the middle of the north wall, the serving table placed against the west wall, and somewhat balanced by the china cabinet at the southern end of the east wall. Chairs are conveniently disposed.

It is assumed that the master of the house here does his own carving, and that he is assisted in so doing by adequate lighting, furnished by some desirable type of central lighting fixture; general illumination, however, is supplied by wall brackets placed on either side of the main entrance, and on the opposite west wall. Switches controlling the brackets are located at the right of the hall opening, while the switch for the central fixture is placed on the right of the door from the butler's pantry. Either the brackets or the central fixture should be controlled by a three-way switch, so that a person passing through the dining room in either direction can make a light on entering, and put out the light on leaving the room.

Convenience outlets are noted at several points; that to the left of the serving table suggests the use of a percolator, egg-boiler, toaster, or similar device at the serving table, at the hands of some deft servitor. The receptacle indicated at the left of the sideboard would permit the addition of electric candles to the general lighting scheme, and also provides a possible location for an electric radiator in cool weather. Vacuum cleaning can be conducted from this point also, or from the receptacle to the left of the hall opening; from this latter point of vantage, the cleaner could be operated in the entrance hall, and dining room.

Most certainly an electric floor outlet should be provided under the table; it may here be said that it is generally possible to bring the wire through an "invisible" seam in the rug, which usually can be split for an inch to facilitate the passage of the wire. But where this is not possible, a tiny aperture can probably be made by forcing apart the warp and woof of the rug with a pointed embroidery bodkin, thus avoiding any cutting of the threads. The writer also heartily recommends either the judicious wiring of the dining room table, or some other arrangement to make easy the plugging in of electric table appliances at one or more points; two table outlets are frequently advantageous. If the theoretical

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family could remain forever assured of the services of a waitress or butler, these outlets might be dispensed with in favor of side cooking at the serving table. Or, were the house built designedly for self-service, or for operation with a minimum of hired assistance, the receptacle near the serving table could be omitted, leaving the table outlets to provide for table cookery.

The plan also shows a butler's pantry or shelved passageway between the dining room and the kitchen, for which the electric requirements are very simple. Adequate lighting should be afforded by a single fixture, placed near the ceiling to avoid shadows, and switched from the kitchen. One receptacle is provided for the silver buffer, toaster, or for use of an electric platewarmer.

Many house plans drawn nowadays bear mute witness to the scarcity of "domestic employees" by calling for an additional "breakfast room," "kitchen nook," or "breakfast corner." The name may vary a little, with the location of the room, or the amount of space involved, but the fact remains the same; architects are frequently asked to provide some small informal dining place, where the mistress of the house can readily and quickly serve a small, informal meal. There is no need of especially depicting such a room here, since the same principle of electric wiring holds good for this, as for the larger dining room. Lighting will be very simple, and will be supplied either from a small central fixture, or a wall bracket, depending on the position chosen for the "nook." But in the very nature of the case, ample receptacle facilities should be reckoned on, as self-service will evidently prevail here, and table cookery will be at a premium. It may well be that a leaved tea-wagon will take the place of the larger dining table, in which case it would probably be advisable to have the tea-wagon wired for the purpose.

Fee due Architect for Extra Cost

UNDER date of February 27, 1922, the United States Supreme Court handed down a decision in favor of Eames and Young, architects of St. Louis, upholding a decision in the Court of Claims from which the United States had appealed.

Eames and Young made the plans for a custom house at San Francisco and supervised its construction. The contract provided that the fee of the architects was to be computed at the rate of five per cent. upon "the actual cost of the work executed from the drawings and specifications, as shown upon the books of the Supervising Architect's office, by the net amounts of contracts awarded and proposals accepted for additions and deductions."

There was a delay of three years due to the San Francisco earthquake and fire with an increase in the cost of labor and materials. Congress awarded the contractor the sum of $101,907.66 as an extra payment to cover the increased cost. The claim of the architects for five per cent on this amount was denied. The Government contended that the amount awarded to the contractor in addition to his original contract price was a gratuity and could not properly be treated as part of the cost of construction contemplated in the contract.

Mr. Eames died and Mr. Cook, his executor, joining with the surviving partner, Mr. Young, brought suit in the Court of Claims, obtaining a judgment for $5,085.33, which may now be collected.

Court of Appeals Sustains Zeolite Water Softener Patent

THE U. S. Circuit Court of Appeals, Second Circuit, N. Y., rendered an opinion on February 14, 1922, affirming a decision previously handed down by the Federal Court at Buffalo, N. Y., that sustained a patent owned by The Permutit Company, covering zeolite water softeners. According to this decision all zeolite water softeners on the market not manufactured by them, are an infringement of this patent.

Zeolite is a generic name of a group of hydrated double silicates in which the principal bases are aluminum and calcium or sodium. Among anhydrous silicates they are closely allied to the feldspars.

Individual Liability for Preventable Fires

THE Massachusetts legislature, says *The N. F. P. A. News Letter,* is now considering a bill to fix the cost of extinguishing fires upon persons disregarding fire prevention orders. The Chicago City Council is considering a similar measure in the form of a city ordinance. Cleveland and Cincinnati already have such an ordinance.

Fire losses are increasing so greatly in the United States as to excite apprehension. Much of this is due to the item of "Moral hazard," the name given by insurance adjusters to the habit some people have of regarding a fire insurance policy as a cash reserve which may be drawn upon when times are hard. Some fires occur because tenants notoriously are less careful than owners, and an increase in the number of home owners will reduce this class of fires. Of still another class of fires a recent bulletin of the National Lumber Manufacturers' Association has the following to say:

Looking back over the years the degree of carelessness of the occupants of buildings seems to have increased in proportion to the added degree of fire protection. A residence built of materials that will not readily burn increases the occupant's negligence and general carelessness.

In this connection, the opinion of one whose daily contact with the fire problem in a mid-western city should be interesting. Daniel F. Shire, Chief of the Fire Department at the Rock Island Arsenal, Rock Island, Ill., in a statement which appeared in the March, 1922, issue of *"Fire and Water Engineering"* said:

"The only persons who can prevent loss by fire are the owners and occupants of the premises—upon them rests the responsibility of loss in nearly every fire."

The high esteem in which wood as a building material is held by those who have a thorough knowledge of the conditions, is shown in another statement by Mr. Shire in the same magazine. He says: "Fire-proof construction means nothing to you if it is not safe construction. I would rather go up against good safe mill construction than the so-called fire-proof building any time, and so would you."

In many countries the cost of extinguishing fires is put upon the persons found to be responsible, following a searching inquiry into the cause. The damages paid cover the cost of the investigation as well as cost of police protection during and after the fire, the amount of water consumed and the time required of public employees because of the fire. In addition all sufferers by the fire are entitled to collect damages from the culpable individuals, who are also from that time regarded with suspicion by landlords and insurance companies. The relatively small per capita fire loss in Europe, compared with that in the United States, is believed to be due more to such laws properly enforced than to better construction of buildings, for no proof has yet been adduced to show that the average house in Europe is superior in construction details, or materials, to the average house in America.

The 660-Watt Rule

A HEARING open to all parties interested will be held in the assembly rooms of the Chicago Board of Fire Underwriters, Insurance Exchange Building, Chicago, Ill., beginning at 10 A. M., Tuesday, April 18, 1922 to discuss the 660-watt rule. It is the present plan to arrange for a second public hearing, probably in New York City, on or about May 15, 1922.

The 660-watt rule is largely a relic of past conditions, when carbon lamps, consuming approximately 50 watts for 16 candles, were used and when branch circuits were limited to six amperes, equivalent to 660 watts at 110 volts. Fuses in branch circuits may now be ten amperes for 125 volts or less, and six amperes for 250 volts, permitting in effect 1250 watts on a 125-volt circuit, or 1500 watts on a 250-volt circuit.

With the great increase in the number and variety of attachments, such as electric washers, sweepers, irons, heaters, large lamps, etc., there has come a pressure for permitting a larger wattage on branch circuits. These devices frequently are connected on the same circuit with lights and, drawing five or six amperes apiece when the lights are on, often exceed fuse ratings and blow the fuses. The result is that wires, pennies or other devices are resorted to to bridge the fuse gap and the circuit is often-times worse off than if higher fusing were permitted.

The Chicago meeting here mentioned will be in charge of Mr. A. Penn Denton, 17th and Oak Sts., Kansas City, Mo., and Mr. A. R. Small, 207 East Ohio St., Chicago, Ill., members of the Standing Committees on Devices and Materials and on Wiring Systems and Standards of the Electrical Committee of the National Fire Protection Association.

It is hoped that readers of THE AMERICAN ARCHITECT, all of whom are interested in this important question, will express their views regarding the proposal to change Rule 23 d and related rules of the National Electric Code covering limitations upon maximum loads of branch circuits. The Committee wishes to receive written communications from those interested who cannot attend the meeting.

Notes on Materials of Construction

THE National Lime Association, Washington, D. C., brings out this month two more bulletins in the educational series, known as Lime Briefs.

Lime Brief 251 is said to be the first publication of its kind undertaking to summarize completely all of the uses of lime, and to present that summary on a functional basis, grouping together under various headings the uses that depend on the same chemical function.

The publication covers the agricultural, chemical, and construction fields, and is well enough written to interest the general reader. Included in the brief is a comprehensive chart giving a bird's-eye view of the entire subject.

Lime Brief 265 presents an outline of the fundamentals in the textile industry with particular attention to the processes involving the use of lime.

The Structural Materials Research Laboratory, Lewis Institute, Chicago, Ill., has issued Bulletin No. 10, entitled "Wear Tests of Concrete." This bulletin is a reprint of a paper by Professor D. A. Abrams which was originally published in the *Proceedings* of the American Society for Testing Materials, Vol. 21, 1921. The discussions which appear in the *Proceedings* have been omitted; a summary has been added which was omitted in the original publication.

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Professor Abrams concludes that the wearing resistance of concrete is determined largely by the *quality of concrete* rather than by the type of aggregate. Good concrete can be produced from aggregates which are generally considered inferior, if other factors are taken into account. In general the factors which gave concrete of high strength also gave tough concrete. These factors are: plenty of cement, exactly enough water, grading to secure large proportion of coarse aggregates, long mixing, curing under favorable conditions.

Wind Velocity and Radiation Losses

AT the Annual Meeting of the American Society of Heating and Ventilating Engineers, held in New York City, January 24-26, 1922, an interesting paper was read by Mr. W. L. Fleisher on "The Effect of Wind Velocity on Radiation Losses and Inleakage."

He stated that the Standardization Committee of the Heating and Piping Contractors' National Association had accepted the b.t.u. transmission factors obtained by the late John R. Allen, for radiators and pipes and now are trying to obtain proper factors for varying wind velocities. These factors will determine two things now practically guessed at in all determinations of radiation losses; first, inleakage or air changes, and secondly, exposure coefficients. The committee members decided that both are factors of what may be termed a "wind variable." "Probably everyone," said the speaker, "allows a factor of safety for different exposures, such as 30 per cent. additional for a north exposure added to wall and glass of that exposure, down to 5 per cent. for southern exposures or sometimes no additional amount at all. These factors, the product of experience, are very crude and take care of inleakage as well as transmission. As far as inleakage or air change is concerned, we say for this room one-half an air change, for that, one air change and for that other, two air changes, depending on the number of windows, doors, flues, corridors, elevators, stairways, etc., influencing the inleakage of the particular room in question. I am afraid we shall always have to add a factor of safety, even if the problem is thoroughly worked out in a research laboratory because the factor of care of installation and of the materials of construction is in the hands of the workman on the job, a factor that can never be determined in a laboratory. Still we have already gotten to the point where we can say inleakage is a factor of the lineal foot of window crack, the type of window and the wind velocity. We also can say that the K of radiation is a factor of wind velocity as well as temperature, and by temperature, I mean both dry and wet bulb."

The deductions of Mr. Whitten from observations made at Harvard Medical College in 1910 were published in 1912. In 1915 Messrs. Whitten and March modified the previous deductions but not enough to affect the main data.

In 1916 Messrs. Voorhees and Jones tested the inleakage through window cracks under varying wind pressures and established the fact that it varies with the wind pressure or velocity. The research laboratory has carried on tests to determine inleakage, which show it to be a direct factor of wind velocity. These tests will be continued for some time to obtain usable factors.

Mr. Fleisher described some independent tests in his own laboratory and concluded that nature has been very kind to the heating engineer by tempering the wind to the temperature. In other words, while it is now known that wind velocity is as important as temperature, the wind velocity as a rule decreases as the temperature falls. In his computations he found that as the temperature fell to what he called the danger point, the additional computations required for the assumed wind velocity at that temperature about balanced the difference between the minimum assumed temperature and the actual temperature with the assumed wind velocity. Danger of insufficient radiation was obviated by the usual factors of safety employed, a somewhat unsatisfactory condition of affairs which will be remedied as data accumulate.

THE AMERICAN SPECIFICATION INSTITUTE

127 North Dearborn Street, Chicago, Ill.

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The American Architect and The Architectural Review *has gratuitously set apart this section for use by The American Specification Institute.*

The Editors and Publishers assume no responsibility for any statements made, or opinions expressed.

The purpose, simply stated, is to afford an organization which, it is believed, will become a most important element in architectural practice and building operations, a medium through which it may, without expense to itself, reach a class of readers that are most intimately identified with the field of the activities of The American Specification Institute.

Publishers, The American Architect and The Architectural Review.

Spring Conference

THE Spring Conference will be held in Chicago on the evening of April 21. The subject of this Conference will be Painting—For Structural Steel, Wood and Plaster.

A number of the members have sent in inquiries or comments respecting specifications for paint and varnish finishes and, in view of the general impression that many complications may easily arise in the preparation of specifications for, and the execution of, paint and varnish finishes it is believed some progress may be made toward the formulation of a bulletin covering this subject.

The speakers of the evening will be a painting contractor and an engineer who has made a study of steel protective paints. No representatives of manufacturers or dealers will be permitted to attend as it is felt that with such men present the discussions may follow channels of thought that would only tend to confuse the audience. This does not mean that producers of paint and varnish materials will not be called on to lend their assistance toward the preparation of specifications at a later date. Their assistance will, on the other hand, be of the greatest value at the proper time. The meeting, then, will be more of an experience meeting of those who specify and use these materials.

Members who cannot attend are requested to send in short papers expressing their views on all phases of this most important subject, such as choice and specification of materials, preparation of surfaces, number of coats and the mechanical composition of specifications so that it may be understandable.

Advisory Committee

THE Chairman, Mr. R. Jarvis Gaudy, announces that he has formulated a series of suggestions that will be sent to members of the Advisory Committee at intervals. There is involved in the problem of formulation of a policy for the Advisory Committee activities the matter of assistance that can be rendered in the organization of district activities, although this work does not properly come within the activities of the Advisory Committee.

Mr. William Rice Pearsall, Advisory Committee member in New York City, has, with the assistance of Mr. Louis O. Rohland, Mr. Ralph B. Higgins and Mr. Walter Bradnee Kirby, arranged for a meeting to be held in New York City on the evening of April 6 at the Yale Club.

Mr. Pearsall has sent the following letter to members resident in New York State and New Jersey:

"There is an effort being made to establish periodical meetings of the architects and engineers or their representatives, who are members of The American Specification Institute, for the purpose of exchanging information and comparing experiences which will be beneficial to all concerned in improving the writing of specifications.

"We should, as members in New York City, be able materially to assist each other by bringing together our experiences and methods of work which we have found to be most successful.

"The first of such meetings will be held on

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Thursday, April 6, 1922, and is to be strictly informal. The subject which has now been suggested by two or three of us who got together last week is as follows:

GENERAL METHODS OF WRITING SPECIFICATIONS

A. The best method of sub-division of various trades
B. The best method of sub-division for the letting of contracts
C. The best method of arranging the subject matter in each heading

"It is hoped that you will find it convenient to be present, and that you will come prepared with helpful suggestions, based on your office practice. It is not intended that prepared statements are necessary, but we would like each one to give his experience on this subject briefly with a view to everyone being able to take away from the meeting something definite that will be of service to him in his work.

"We will meet in the Lounge of the Yale Club up to 6:30 o'clock when we will adjourn to the main dining room on the twentieth floor for dinner and later adjourn to a private room for the discussion of the evening."

It is hoped that all members of the New York district will find it possible to attend this meeting to lend their assistance to the important work that will be under discussion.

Similar meetings will be held in other cities in the near future, the dates now being in process of determination.

Attention of members is directed to two errors in the list of Advisory Committee districts appearing in the February 15 issue. The state of Alabama should have been included in District No. 10 and not in District No. 4 and under District No. 4 West Virginia was intended, instead of Western Virginia.

The Advisory Committee membership is as follows: R. Jarvis Gaudy, Chairman, 140 So. Dearborn Street, Chicago; Frank Irving Cooper, District No. 1, 172 Tremont Street, Boston, Mass.; William Rice Pearsall, District No. 2, 527 Fifth Avenue, New York City; Seymour H. Knight, District No. 3, 1611 Chestnut Street, Philadelphia, Pa.; T. E. Billquist, District No. 4, 323 Fourth Avenue, Pittsburgh, Pa.; C. A. Graether, District No. 5, Washington Arcade, Detroit, Mich.; George C. Wright, District No. 6, 2007 Peoples Gas Building, Chicago; L. O. Kirk, District No. 7, 1200 Second Avenue, South, Minneapolis, Minn.; William F. Wischmeyer, District 8, Chemical Building, St. Louis, Mo.; John Galen Howard, District No. 9, First National Bank Building, San Francisco, Cal.; Harry B. Wheelock, District No. 10, Steiner Bank Bldg., Birmingham, Ala.; J. R. W. Ambrose, District No. 11, Toronto Terminals Railway Co., Toronto, Can.

There is being mailed to each member a list of all members of the Advisory Committee, a list of states comprising the various districts and a list of members in the district of which each member is a resident.

NEW MEMBERS

The following new members have been elected: Walter Bradnee Kirby, Architect, New York City; Jack A. Scanlon, Engineer, Evanston, Illinois; J. Binford Walford, Architect, Richmond, Va.; Mackenzie Waters, Architect, Toronto, Canada.

Lodge House, Eaton Hall, Chester, England
(From a photograph by Robert M. Blackall)

CORRESPONDENCE

The Quantity Survey

The Editors, THE AMERICAN ARCHITECT:

REFERRING to the communication from Cass Gilbert published in the issue of March 15:

It is not my purpose to discuss competition for architectural commissions or to say what fees would be just and proportionate to service rendered. But surely the service promised will be an important factor in deciding either the choice of an architect or the amount of his fee. Today architects do not collect a uniform rate of fee for services and they never will so long as building owners exercise common business sense in appraising values and in buying service.

Service is the keynote. Does quantity survey give good service to the building owner, to the architect and to the contractor? That is the only question that is vital. The question of the surveyor's fee is irrelevant, and how it is to be paid a mere detail. Every reader of this magazine knows that building owners now pay indirectly many times more for work done by builders in taking off quantities than quantity surveys would cost.

Common business sense tells building owners that the protective features of quantity survey for bidders should draw closer bids and that anyway accurately prepared quantities will be enough lower to pay for themselves. They like the idea of seeing the bill of goods they must buy. It is more like regular business. It gives a proper trading basis. When they are enlightened concerning the indirect tax that contractors would otherwise collect for quantity work, but which the quantity survey system makes unnecessary, they wonder why architects and contractors have tolerated the old loose speculative methods so long.

Mr. Gilbert suggests that if the building owner wants quantity survey, let him promote it. I ask the readers if that is compatible with "the professional ethics so much to be desired." A building owner is entitled to the best advice and counsel his architect can give towards securing a good building at minimum expense. If quantity survey helps in that direction, an architect, it seems to me, would be bound by "professional ethics" to tell his client so.

However, I am not asking the recommendation of quantity survey merely to avoid a breach of the "Code of Ethics." I do ask it on the grounds of better service, which appeals to the business instinct as well as to the professional.

Mr. Gilbert states that "The Quantity Survey has not been a success in England." From the tenor of Mr. Gilbert's article as a whole I can only interpret this statement as meaning that to his mind quantity survey has been a failure in England because it has not increased architectural fees. The statement is certainly contradictory to the general verdict of those perfectly familiar with the facts. Quantity survey is held in the highest esteem in England and is used on practically all important work.

Mr. Gilbert speaks of added responsibilities through quantity survey and evidently fears controversies and litigations arising therefrom.

An architect assumes no responsibility for the quantity survey he uses in accordance with "Basis of Contract B." (See Joint Committee Report.) (Please note that we do not recommend making the survey part of the contract, although that is commonly done in England. When that is done an architect might easily feel responsible for the survey and be blamed by his client perhaps, though unjustly, if during construction errors in the survey were discovered, which required additional payment to adjust.) He guarantees it accurate only for bidding purposes. He does this to establish a required uniform basis for bids. The surveyor does not guarantee the survey because there is no satisfactory way in which he can do so. Before signing a contract the successful bidder may check the survey, and if he proves errors to exist in it, is permitted to adjust his bid correspondingly. Then the regular Lump Sum Contract for the erection and completion of the building in accordance with the drawings and specifications is made. The survey does not become a contract document and therefore cannot be a cause for controversy or litigation. On the contrary, the preparation of a survey by disclosing whatever ambiguous or contradictory items may have gotten into the drawings and specifications, forestalls claims for extras and allowances arising from such causes. Furthermore, by issuing the best survey procurable, one presumably strictly accurate, an architect does protect bidders against the all too easy quantity mistakes which can be made in rushing out bids. He protects them against misinterpretation of the design and against erroneous calculation of quantities. That is only fair play toward bidders. Thus quantity survey offers the means to give such protection against serious loss which every fair-minded architect must desire for contractors.

Quantity survey must properly be initiated by the architect. First, because without the co-operation of the architect it is impossible to make an accurate survey. Second, because the architect should control all matters relating to the execution of his design. Third, because even if a building owner felt favorably inclined toward quantity survey, he would leave the decision with his architect. Fourth, any architect who makes a whole-hearted recommendation for a quantity

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survey will seldom fail to get one. Fifth, Contractors cannot work the survey plan because they cannot guarantee the quantities accurate for bidding purposes, and hence the protective and economic features of it are defeated.

Wm. Graves Smith, Pres.,
The Quantity Survey Co., Inc.

The "or equal" Clause

The Editors, The American Architect:

WE take pleasure in noting your editorial, commencing on Page 139 of the February 15 issue of The American Architect, in which you set forth the desirability of a straight specification freed of "or equal" clauses, and wish to commend you for the stand that you have invariably taken on this subject. Architects only have themselves to blame for the frequent disappointments, which are the result of that "or equal" clause.

This is a particularly vexing question to Associations and Organizations who are endeavoring to develop standards of quality and practice. The "or equal" clause frequently permits an inferior product, or a product not up to the established standard, to slip in at a cut price and it therefore does not protect the owner, but simply gives the contractor an opportunity to peddle and substitute for the kind or quality which the architect intended to have used.

The unfortunate part of this is the architects so seldom blame themselves when the results are not satisfactory, but complain to the agency which is responsible for the article recommended and accepted as the basis of standard in the writing of specifications.

H. S. Brightly, Service Engineer,
Indiana Limestone Quarrymen's Association.

Tennessee Memorial Competition

WE publish in this issue of The American Architect the three premiated designs for the competition for a War Memorial to be constructed in Nashville, Tenn.

In the program it was suggested that "the memorial be so treated as to form with the Capitol as nearly as possible a single composition." Accordingly, we think that the drawings that we present will be of special interest to our readers, particularly to members of the American Institute of Architects, who will no doubt recall the Convention that was held in Nashville some years ago. The Capitol Building then attracted much attention and the suggested treatment of these additional buildings is evidently the beginning of a great program for Nashville's future official center.

So that these drawings may be clearly understood we quote further from the program: "The authorities have united to establish a memorial in the form of two buildings, a park and a boulevard," and further "Toward the latter, on the axis of the Capitol, extends Capitol Boulevard, now furnishing a short approach from Church Street, one of the City's principal thoroughfares, but expected eventually to extend southward to Broad Street, the other chief highway of the City's center. Upon either side of Capitol Boulevard the commission have acquired properties which with the boulevard and surrounding streets, create a plaza of about 460 by 600 feet, forming a forecourt to the Capitol. These properties, save as dedicated to a new street named below, will be known as 'Victory Square'."

Damp Linen Fire Hose

COMPLAINTS frequently reach the National Fire Protection Association that unlined linen hose has been seriously injured by mildew and rotting of the fibres. Investigation of several recent incidents of this sort has revealed the fact that on delivery of the hose and before installation it had been subjected to a hydraulic pressure test, and not thoroughly and completely dried out. Damp linen hose will rot. A leaky valve on the stand pipe may pass enough water to rot the hose at the coupling. Linen hose should not be wet unless it can be completely dried in every part.

Fire Prevention Lessons in Schools

THE Fire Prevention Committee of the Philadelphia Chamber of Commerce reports an arrangement with the Superintendent of the Department of Public Instruction of the State of Pennsylvania, to introduce the study of fire prevention in the public schools throughout that state. The syllabus, which is to include accident prevention, is now being prepared for the opening of the schools in September.

St. Martin's-in-the-Fields

THE most conspicuous church in London, St. Martin's-in-the-Fields, will not have celebrated its bicentenary in vain if the numerous notices of the event that have appeared in the lay press succeed in whetting the public appetite for information about buildings. Many Londoners will have conveyed to them now for the first time the information that James Gibbs was the name of the architect; that a bust of him by Rysbrach stands just inside the church; that King George I was its first churchwarden (apparently the only king who ever assumed that office); that Francis Bacon, Charles II, and Hampden were christened there; that Nell Gwynne, Fairfax, Roubiliac, Rose the gardener who laid out St. James's Park, and Thomas Chippendale, are among the celebrities buried there.

BOOK NOTES

The New Kidder*

WITH the seventeenth edition, Kidder's Architects' and Builders' Pocket-Book has been styled Handbook, which shows that even publishers may develop a sense of the fitness of things. Changes have been made throughout the book and there have been added, Chapter XXX, on Specifications for the Steelwork of Buildings by Robins Fleming, of the American Bridge Co., and Chapter XXXI, on Domical and Vaulted Structures, by Edward F. Ries. Mr. Rudolph P. Miller, until recently Superintendent of Buildings, Borough of Manhattan, New York City, has re-written Chapter XXIII, on Fireproofing of Buildings and Chapter XXIV, on Reinforced Concrete Construction. Mr. Louis A. Harding has re-written the sections on Heating and Ventilation, and Chimney Construction.

The popularity of Kidder as a text and working manual is bound to endure as long as the Editor-in-Chief, Prof. Thomas Nolan, continues to demonstrate his ability to understand how to meet the needs of men who have use for a handbook of building construction. It is today indispensable in the office of every architect and architectural engineer.

** The Architects' and Builders' Handbook. By the late Frank E. Kidder, C.E., Ph.D.; Compiled by a staff of specialists and Thomas Nolan, M.S., A.M., Editor-in-Chief. 17th edition, enlarged. XXIV + 1907 pp. Ill. 4¼ x 7 ins. Flexible binding. New York, John Wiley and Sons, Inc. Price $7.00.*

Professor Hamlin's History of Architecture*

THIS work, since first published in 1895, has gone through three editions and fifteen reprintings. Each edition has been carefully revised and brought down to date of latest facts as affecting, particularly since the great war, the history of architecture all over the world. While primarily written to meet the needs of the college student, the author has happily so arranged the discussion of his various topics, divested his writing of the ultra-technical phraseology of the text book, that the general reader may take up this volume and read it through with both pleasure and profit. The treatment and description of architecture from its earliest periods down to the present day become a very large undertaking.

In putting together a work of this nature, the writer therof, knowing all his facts, will proceed almost exactly as will the landscape painter who thoroughly knows the phase of nature he sets down on his canvas. In both cases, a thorough knowledge of all the facts enables the author or painter competently to omit those that are not necessary to the exact presentation of his subject.

In fact, elimination will require as much, if not more, skill than the presentation with every detail present. Prof. Hamlin had necessarily, in producing a volume of this limited size, on a topic so large, to exercise a scholarly method of elimination. This faculty he has shown he possesses to an unusual degree. We have a history of architecture in which no essential is missing and in which no non-essential mars the accuracy of authorship.

** A text book of the History of Architecture, by A. D. F. Hamlin, Professor of the History of Architecture at Columbia University. Full cloth, 477 pp. Price $2.50. New York, Longmans, Green & Co.*

Seeing is Deceiving*

MR. LUCKIESH begins his latest book with the trenchant sentence "Seeing is deceiving" and, what is more, proves it to be true. According to this interesting writer misleading perceptions may be divided into illusions and hallucinations. Error in judgment is responsible for the "illusion" that two lines appear to be of equal length when they are not. If something is seen which does not exist, the imagination is responsible for the "hallucination," for the essential facts are supplied by the imagination. The author in the introductory chapter differentiates between misleading perceptions and, eliminating those created by the imagination, fills 250 pages with examples of errors in judgment, their causes, effects and how they may usefully be used. Errors in judgment may cleverly be utilized strongly to affect the imagination. Illusions may produce hallucinations.

During the late war the appearance of camouflaged ships caused much comment. Early attempts apparently were directed towards creating vessels which would disappear from view in the expanse of sea. Spars, however, cannot be concealed, nor can smokestacks and upper works. Mr. Luckeish tells how the camouflaging of ships reached the point where broad stripes of pronounced colors superseded irregular splashes, the object being the production of geometrical optical illusions which made it impossible for periscope observers in submarines to determine the course of a vessel. He tells how camouflage was applied to submarines and even to aeroplanes.

Camouflage, however, occupies but small space; far more is given to lighting, painting and decoration and also architecture. Devotees of the graph-

** Visual Illusions, Their Causes, Characteristics and Applications. By M. Luckiesh. 252 pp. 100 illustrations 6x9 in. Cloth. New York, D. Van Nostrand Co., $3.00.*

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ic arts cannot fail to be helped by this entertaining book. It contains no mathematics and the avoidance of technical terms and pedantry makes it interesting to all readers who love what is curious and stimulatingly speculative.

The History of Architecture*

THE late Prof. Banister Fletcher, F. R. I. B. A., and his son wrote a history of architecture which went through five editions, the first of which appeared in 1896 and the fifth in 1905. Promises of a sixth edition led to six reprintings of the fifth edition at intervals, the last being in 1920. The sixth edition is now on the market, written by the son who says in the Preface ".... ....I have now entirely rewritten and recast the book from cover to cover. I have not relied solely on other authorities, and my descriptions are largely the result of personal observation of the world's greatest monuments from ancient Troy to modern Chicago."

The book is a veritable encyclopediac history and describes and discusses the historical styles, those of ancient and modern Europe and modern America; as well as the non-historical styles, Asiatic and Saracenic. The author uses a comparative and analytical method throughout, each period being divided into five sections as follows: 1. Influences: Geographical, Geological, Climatic, Religious, Social, Historical. 2. Architectural Character. 3. Examples. 4. Comparative Analysis: Plan, Walls, Openings, Roofs, Columns, Moldings, Ornaments. 5. Reference Books.

The type is ordinary newspaper size and, while easy to read, gives one a forbidding impression at first glance. The style is pleasing in spite of the meticulous care to preserve the encyclopediac value of the work. A glossary, in smaller type, fills 9 pages and the Index fills 60 pages. The author quotes Morgan, "Architecture is the printing press of all ages, and gives a history of the state of society in which it was erected," and this idea he keeps to the front in his work.

It is by no means a book one would expect to finish at a sitting; nor would one count on reading it from cover to cover except under urge. As a work to dip into from time to time and to refer to for dates and facts it is satisfactory. For the use of the student of architecture it may be strongly recommended.

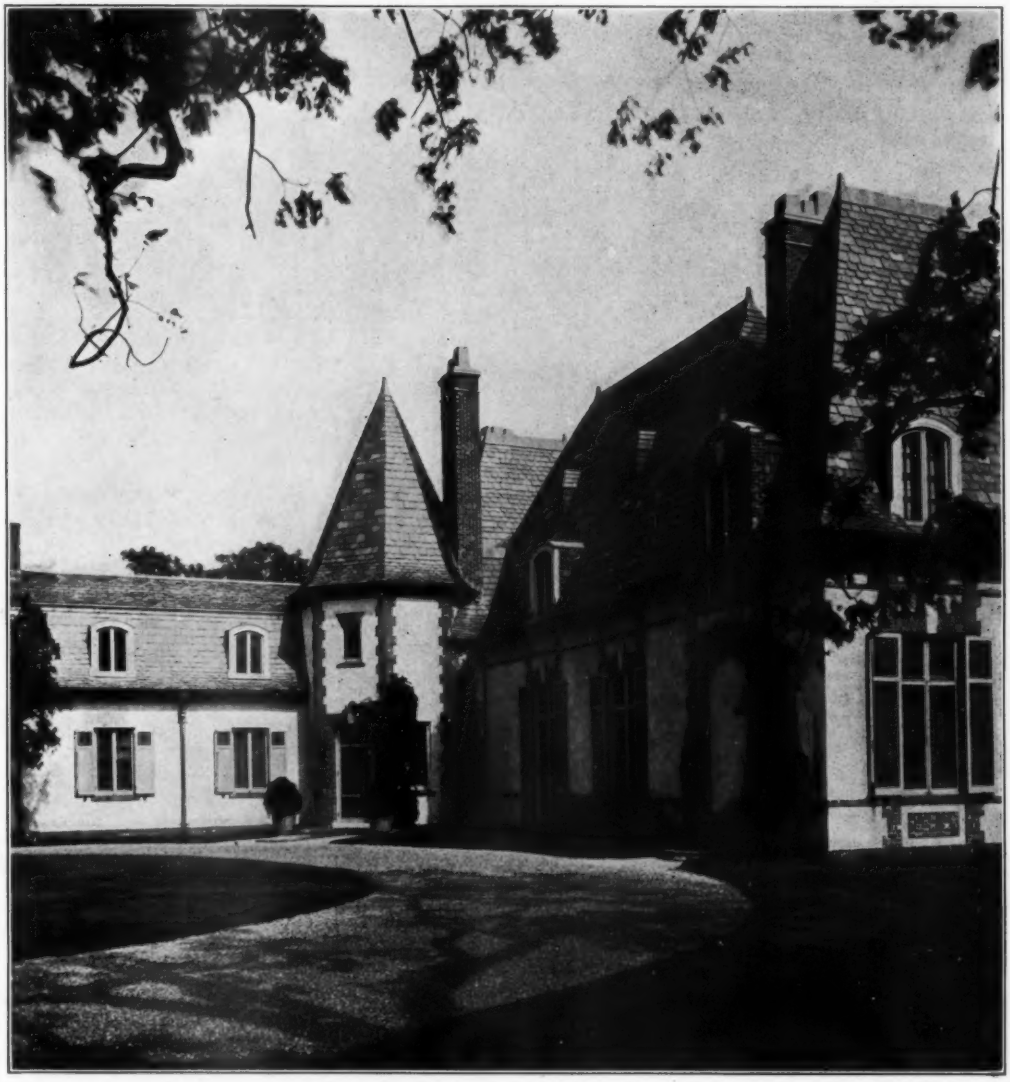
* *A History of Architecture on the Comparative Method, for Students, Craftsmen, and Amateurs. By Sir Banister Fletcher, Architect, F.R.I.B.A., F.S.I., F.R.G.S., F.R.S.I., etc. Sixth Edition, Rewritten and Enlarged, with 5,500 illustrations. 932+XXXIV pp. Ill. 6x9 in. Cloth. New York. Charles Scribner's Sons.* $12.00.

The Design of Steel Mill Buildings*

THE first edition of this work appeared in 1903, the second in 1906, and the third in 1912. The author states that the present and fourth edition has been re-written and much new material added. Of the 410 cuts more than half have not appeared in previous editions and practically all of the old cuts have been re-drawn. The scope of the book has been enlarged by the addition of a discussion of the calculation of the stresses in statically indeterminate trusses and frames, several problems in framed structures and detailed designs of a crane girder, a roof truss, and a steel frame mill building. A complete specification for steel frame mill buildings is given in an appendix.

It is a satisfying work for any man to read who is interested in steel design. A copy should be owned by every structural designer, for it is complete and up-to-date.

* *The Design of Steel Mill Buildings and the Calculation of Stresses in Framed Structures. By Milo S. Ketchum, C.E., Director of the Department of Civil Engineering and Professor of Civil Engineering, University of Pennsylvania, etc. Fourth edition, Re-written. 632+XVIII pp. 401 ill. Flexible binding. 6x9 in. New York, McGraw-Hill Book Company, Inc.* $6.00.



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XUM

First Brick Paved Street in U. S.

CHARLESTON, W. VA., was the first city in the United States to use brick for street paving. Although brick had been used to pave streets in European countries, principally Holland, for nearly a century, they were not tried in the United States until 1871, when Charleston paved Summers Street with building brick, which served for 38 years. The state museum at Charleston has on exhibition the first brick laid in the street, from which not more than 1 in. was worn in the generation it served. In 1894 Quarrier Street was paved with brick and, although 27 years old, is still in good condition today. The bricks were laid on a base of 3 in. of sand, 1 in. of tarred oak planks and a second 3-in. layer of sand.

U. S. Memorial Road Planned for France

A MEMORIAL highway to be modelled after the Lincoln Highway, is being planned for France and Belgium by the American Scenic and Historic Society. Tablets along the route will commemorate the participation of the American troops in France in the World War.

Tentative routes on a map prepared were as follows: First from Paris, via Chateau-Thierry, Rheims, Montfaucon and Luxemburg to Coblenz, following in the latter part the route taken by the American Army of Occupation; second, from Montfaucon, southward through Verdun and St. Mihiel to Toul, thence northward through Thiaucourt, to Luxemburg, and third, from Chateau-Thierry northward through Soissons, Peronne, Arras and Lille to Brussels. These routes pass through or near the principal battlefields and the seven permanent cemeteries for American soldiers in France and Belgium.

States Enforcing Architectural Registration Laws

SEVERAL inquiries have been received from correspondents, asking particulars as to the states wherein architectural registration laws are in force. In order to answer these inquiries and to make a record of these states, the following is printed.

Information as to registration laws now in force in the following states may be obtained as follows:

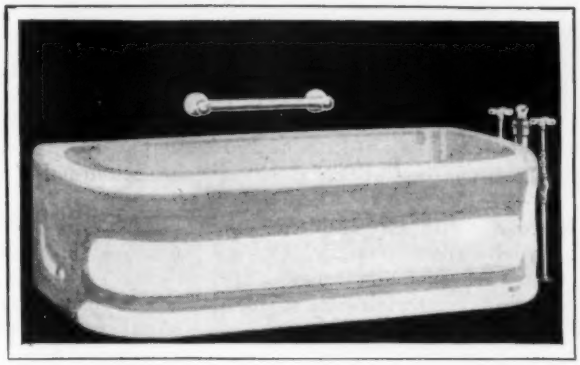
California—State Board of Architecture, Phelan Bldg., San Francisco. Colorado—State Board of Examiners of Architects, Denver. Florida—State Board of Architecture, 135 East Bay Street, Jacksonville. Georgia—State Board of Registration of Architects, Atlanta. Idaho—Department of Law Enforcement, Boise. Illinois—Department of Education and Registration, Springfield. Louisiana—State Board of Architectural Examiners, New Orleans. Michigan—State Board for Registration of Architects, Detroit. Montana—Board of Architectural Examiners, Helena. New Jersey—State Board of Architects, Trenton. New York—State Board of Registration of Architects, Albany. North Carolina—State Board of Architectural Examination and Registration, Greensboro. North Dakota—State Board of Architects, Bismarck. Oregon—State Board of Architectural Examiners, Portland. Pennsylvania—State Board of Examiners of Architects, Harrisburg. South Carolina—State Board of Architectural Examiners, Columbia. Tennessee—Examining Board for Architects and Engineers, Nashville. Utah—State Board of Architecture, Salt Lake City. Virginia—State Board for the Examination and Certification of Architects, Professional Engineers and Land Surveyors, Richmond. Washington—State Board for Registration of Architects, Olympia. Wisconsin—Board of Examiners of Architects, Madison. Such laws are pending in Indiana, Iowa, and Minnesota.

Building and Loan Associations Increase In Number

BUILDING and loan associations, according to information received from Mr. Henry S. Rosenthal, editor of The American Building Association News, now number 8,633 with a membership of 4,962,919, and total assets of $2,519,914,971, states a recent issue of *Engineering News-Record.*

These institutions devote all their assets to the problem of the home builders in America and in many localities during the last few years, they have been the only institutions lending prospective home owners money on reasonable terms. It is indeed gratifying to note the increasing interest in building and loan associations evinced by the contractors and other elements in the construction industry. This interest is fully justified and it cannot be too immediate and aggressive.

Ultimately we shall see devised some sort of a national banking scheme which will enable the building and loan companies to use their two and one-half billions of gilt-edge assets as the underlying security for bond issues, thereby releasing at least 75 per cent. of this vast sum for further loans to home builders. In view of the fact that less than half of our population is a home-owning population it is the part of civic prudence—to say nothing of the immediate benefits accruing to the construction industry when residential building is active—to encourage the building and loan organizations and utilize their resources to the maximum in the national campaign against tenantry.



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XUM

PERSONALS

It is announced that R. K. Knox, architect, formerly of Champaign, Ill., has opened offices for the practice of architecture in the Liberty Life Building, Cape Girardeau, Mo.

A. N. Rebori, John Wentworth and Albert B. Dewey, Jr., have formed the architectural firm of Rebori, Wentworth & Dewey, with offices at 1055 McCormick Building, Chicago, Ill.

Nichols, Sheppard & Colthurst, architects and engineers, 32 Sandwich Street, West, wish to announce that they have moved to their new offices in the Dowler Building, Sandwich Street, West, Windsor, Ontario.

Giaver, Dinkelberg & Ellington, architects and engineers, have moved their offices from the Book Building to 1507 Stroh Building, Detroit, Mich. They would be pleased to receive catalogs in order to complete their files.

George W. Maher, architect, is pleased to announce that Philip B. Maher has recently become associated with him as a partner. The new firm name is George W. Maher & Son, architects, 157 East Erie Street, Chicago, Ill.

Jos. J. Breitman, architect, has moved his office from 117 West Sixty-third Street to 258 West Forty-seventh Street, New York City and desires manufacturers' literature and samples to place on file in his office.

F. J. Ludwick, plant engineer for the H. H. Franklin Manufacturing Company, Syracuse, N. Y., would be pleased to receive catalogs from manufacturers concerned with materials entering into industrial building and power house work.

It is announced that Fred W. Pohlmeyer and Max W. Pohlmeyer have formed a partnership for the practice of architecture, under the firm name of Pohlmeyer & Pohlmeyer, architects, with offices at 303 Central Building, Fort Wayne, Ind. Manufacturers are requested to send samples and catalogs.

Word is received of the recent death of William Stanley Garrett, pioneer Los Angeles architect. Mr. Garrett came to Los Angeles in 1887, and was the third architect in the city to get a State license. He was sixty-seven years of age at the time of his death.

Announcement is made by Flippen D. Burge and Preston S. Stevens, of the dissolution of the firm of Burge, Stevens & Conklin, Atlanta, Ga., of which they were members, and the formation of a new firm with offices at 140 Peachtree Street, that city, to be known as Burge & Stevens.

Robeson Lea Perot, architect, desires to announce that he has recently completed and is now occupying his new offices for the practice of architecture at 137 Harvey Street, Germantown, Philadelphia, Pa. Manufacturers' samples and catalogs are requested.

The firm of Warren & Knight, architects, announces that John Eayres Davis formerly practicing architect of Detroit, Mich., has recently become a member of the firm, the new firm name now being known as, Warren, Knight & Davis, architects, Empire Building, Birmingham, Ala.

Herbert B. Beidler, architect, wishes to announce that he has moved his offices to the State Bank Building, Auburn, Ind., where he will continue his practice of architecture. Mr. Beidler would be pleased to receive manufacturers' catalogs, price lists, samples and specifications to complete his file.

P. John Hoener, formerly a member of the firm of Hawkins & Hoener, of Springfield, Mo., has announced his association with Albert H. Baum, Jr., and Ewald Froese, both of St. Louis, operating under the firm name of Hoener, Baum & Froese, architects and engineers, with offices in the Federal Reserve Bank Building, St. Louis, Mo. Manufacturers are requested to send catalogs and samples.

Announcement is made that the firm of Bloodgood & Sugarman, architects, has been dissolved. Mr. Bloodgood will continue the practice of architecture at the old office, 17 East Forty-ninth Street, New York City, and Mr. Sugarman, associating himself with Arthur Paul Hess, under the firm name of Sugarman & Hess, will have offices at 16 East Forty-third Street, New York City.

The Watson Engineering Company, architects and engineers, 4614 Prospect Avenue, Cleveland, Ohio, announce that execution of their own designs by their own directly employed construction forces, which war-time conditions made advisable, will hereafter be discontinued. They will continue to furnish complete architectural and engineering service, including consultation, planning, design, supervision and management of construction operations. Their organization will include, as heretofore, a complete technical staff, the personnel of which will insure the maintenance of their past reputation for furnishing to their clients the highest grade of professional service.

XUM

OLD ALCAZAR GARDEN, CORDOBA, SPAIN

AN ANTIQUE MOORISH TOWER OVERTOPPING THE WALLS OF THE ALCAZAR, WHERE KING FERDINAND AND QUEEN ISABELLA LIVED. A GLIMPSE OF THE WATER TERRACE IS SEEN IN THE FOREGROUND

(See "Gardens—Old and New" by Francis Howard)